

**TBPOC CONFERENCE CALL  
July 29, 2010, 9:00 am – 10:00 am**

<b>Topic</b>	<b>Presenter</b>	<b>Time</b>	<b>Desired Outcome</b>
<b>1. SELF-ANCHORED SUSPENSION (SAS) SUPERSTRUCTURE MITIGATION AND ACCELERATION UPDATE</b>  a. East End Resolution Update  b. ZPMC List Response	PMT  PMT	15 min  30 min	Information  Information
<b>2. SAS CONTRACT CHANGE ORDERS (CCOs)</b>  a. CCO 142 (Additional Cable Compacting/ Wrapping Equipment)*  b. CCO 156 (Tower Bolt Replacement)*	T. Anziano, CT  B. Maroney, CT	5 min  5 min	Approval  Approval
<b>3. DRAFT TBSRP 2010 SECOND QUARTER PROGRESS AND FINANCIAL UPDATE*</b>	A. Fremier, BATA	5 min	Information
<b>4. OTHER BUSINESS</b>			
<b>Next TBPOC Conference Call/ Meeting: TBD</b>			

\* Attachments

## *Memorandum*

**TO:** Toll Bridge Oversight Committee (TBPOC)    **DATE:** July 28, 2010

**FR:** Program Management Team (PMT)

**RE:** Agenda No. - 1a  
Item                      Self-Anchored Suspension (SAS) Superstructure Mitigation  
                                 and Acceleration Update  
                                 East End Resolution Update

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**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

An update on recent negotiations with the contractor re resolution of East End issues will be provided at the July 29<sup>th</sup> conference call.

**Attachment(s):**

N/A

## *Memorandum*

**TO:** Toll Bridge Oversight Committee (TBPOC)    **DATE:** July 28, 2010

**FR:** Program Management Team (PMT)

**RE:** Agenda No. - 1b  
Item Self-Anchored Suspension (SAS) Superstructure Mitigation  
and Acceleration Update  
ZPMC List Response

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**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

N/A

**Discussion:**

The ZPMC list of questions and recommended answers will be discussed at the July 29<sup>th</sup> conference call.

**Attachment(s):**

N/A

## *Memorandum*

**TO:** Toll Bridge Oversight Committee (TBPOC)    **DATE:** July 28, 2010

**FR:** Tony Anziano, Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 2a  
Item Self-Anchored Suspension (SAS) Contract Change Order  
(CCO) No. 142 – Additional Cable Compacting/Wrapping  
Equipment

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**Recommendation:**  
**APPROVAL**

**Cost:**  
Not to exceed \$2M

**Schedule Impacts:**  
TBD

**Discussion:**  
To be discussed at the July 29<sup>th</sup> conference call.

**Attachment(s):**

1. Draft CCO 142
2. Draft CCO Memorandum 142

Draft

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**CONTRACT CHANGE ORDER**

Change Requested by: Engineer

**CCO: 142    Suppl. No. 0    Contract No. 04 – 0120F4    Road SF-80-13.2/13.9    FED. AID LOC.:**

To: **AMERICAN BRIDGE/FLUOR ENTERPRISES INC A JOINT VENTURE**

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract. **NOTE: This change order is not effective until approved by the Engineer.**

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

**Extra Work at Agreed Lump Sum Price:**

**Item 1 – Additional Cable Compacting Machines**

In addition to the Contractor's planned two cable compaction machines for contract item work, furnish two (2) additional cable compaction machines, and mobilize the two additional compaction machines to the project site. The cable compaction machines and appurtenances shall be equivalent in all aspects to the Contractor's planned cable compaction machines.

Cable Compacting Machines (2 Each) at Agreed Lump Sum..... \$900,000.00 (TBD)

**Item 2 – Additional Cable Wrapping Machines**

In addition to the Contractor's planned four "Two Wire S-Type Cable Wrapping Machines" for contract item work, furnish four(4) additional "Two Wire S-Type Cable Wrapping Machines," and mobilize the four wrapping machines to the project site. The four additional "Two Wire S-Type Cable Wrapping Machines" and appurtenances shall be equivalent in all aspects to the Contractor's planned "Two Wire S-Type Cable Wrapping Machines".

Cable Wrapping Machines (4 Each) at Agreed Lump Sum Price: ..... \$1,100,000.00 (TBD)

For Items 1 and Item 2, the contractor will be paid the agreed lump sum of (not to exceed) \$2,000,000.00. This sum constitutes full compensation, including markups, for this change.

Upon completion of cable compaction and wrapping operations, the additional equipment provided herein will become the property of the Contractor.

It is understood and agreed that the issuance of this change order in no way whatsoever is an acknowledgement of liability by the Department for past project delays. It is further understood the above delay mitigation measures will not increase the project's critical path. The Contractor shall notify the Engineer immediately if the work directed herein will in any way delay completion of planned fabrication activities.

Consideration of a time adjustment will be deferred until completion of the work specified herein. Determination of a commensurate time adjustment will be made in accordance with Section 10-1.13, "PROGRESS SCHEDULE (CRITICAL PATH METHOD)" and Section 10-1.14, "TIME-RELATED OVERHEAD" of the Special Provisions, as well as Section 8-1.07, "LIQUIDATED DAMAGES", of the Standard Specifications.

It is the intention of this CCO to provide schedule mitigation resources to mitigate the delay associated with the "Lift 12 leave-out section" as shown in Time Impact Analysis number 9 (TIA 9).

DRAFT

Estimated Cost: Increase ☐ Decrease ☒ (Max) \$2,000,000.00

By reason of this order the time of completion will be adjusted as follows: **Deferred**

**Submitted by**

<b>Signature</b>	<b>Resident Engineer</b>		
	Kannu Balan for Gary Pursell, Sup.T.E.	<b>Date</b>	

**Approval Recommended by**

<b>Signature</b>	<b>Supervising Transportation Engineer</b>		
	Gary Pursell, Resident Engineer	<b>Date</b>	

**Engineer Approval by**

<b>Signature</b>	<b>Principal Transportation Engineer</b>		
	Peter Siegenthaler, Const Manager	<b>Date</b>	

We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

**NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.**

**Contractor Acceptance by**

<b>Signature</b>	(Print name and title)		<b>Date</b>
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**CONTRACT CHANGE ORDER MEMORANDUM**

DC-CEM-4903 (OLD HC-39 REV. 6/93) CT# 7541-3544-0

DATE: 8/04/2009

Page 1 of 2

TO <b>Pete Siegenthaler, Principal TE</b>			FILE 04-0120F4		<b>DRAFT</b>
FROM <b>Gary Pursell, STE / Richard Morrow, SBE</b>			04-SF-80-13.2/13.9		
CCO NO. <b>142</b>	SUPPLEMENT NO. <b>0</b>	CATEGORY CODE <b>CHPT</b>	CONTINGENCY BALANCE (including this change) <b>\$76,081,909.40</b>		
<b>\$2,000,000.00 (Max)</b> INCREASE <input checked="" type="checkbox"/> DECREASE <input type="checkbox"/>			HEADQUARTERS APPROVAL REQUIRED? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
SUPPLEMENTAL FUNDS PROVIDED <b>\$ 0.00</b>			IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
CCO DESCRIPTION: <b>Additional Cable Compact/Wrapping Equip</b>			PROJECT DESCRIPTION <b>CONSTRUCT SELF-ANCHORED SUSPENSION BRIDGE</b>		
Original Contract Time <b>2490</b> Day(s)	Time Adj.: This Change <b>0</b> Day(s)	Previously Approved CCO Time Adjustments <b>227</b> Day(s)	Percentage Time Adjusted: (including this change) <b>9%</b>	Total # of Unreconciled Deferred Time CCO(s): (including this change) <b>6</b>	

**THIS CHANGE ORDER PROVIDES FOR:**

Procurement of the following equipment:

1. Additional Cable Compacting Machines (2 each)
2. Additional Cable Wrapping Machines (4 Each)

The complexity of the design of OBG lifts 13 and 14 (East End OBG), with its widely varying geometry and curvature in all three dimensions, the main cable anchorage system, bearings and shear key supports, and the hinge pipe beam connection to the Skyway, has presented design challenges and constructability issues to be resolved during the development and detailing of shop drawings. Consequently, delivery and approval of the East End OBG shop drawings and the commencement of fabrication has been delayed approximately one year.

To recover schedule delays due to the East End OBG and find the shortest route to the bridge opening, the Contractor and the Department, in collaboration with the Toll Bridge Program Oversight Committee (TBPOC), have outlined several delay mitigation measures, which have been presented to the TBPOC for consideration and approvals. The above referenced delay mitigation measures were supported by the TBPOC on xxx meeting. It is anticipated this change order will be approved by the TBPOC in the next scheduled meeting.

It is anticipated these mitigation measures will reduce risk of further delays to the completion of the project, and recover and/or improve the schedule by mitigating past delays. The procurement of the additional compacting and wrapping machines will help in the mitigation of the 56 day, TIA 9 delay caused by the installation of the "Lift 12 leave out section".

Consideration of adjustment of contract time will be deferred until completion of the work involved when actual overall schedule benefits are analyzed and agreed upon with the Contractor.

This work is estimated to total (Not to Exceed) \$2,000,000.00, which can be financed from the contingency fund. A cost analysis is on file.

This change order received concurrences from Gary Pursell (Resident Engineer), Pete Siegenthaler (Principal Engineer), Ken Terpstra (Project Manager), Tony Anziano (Toll Bridge Manager) and Jon Tapping (SFOBB Project Risk Manager). Maintenance and Design concurrences are not required for this change.

This change order received approval from TBPOC on xx, 2010, and an Issue and Approve from Headquarter Construction on xxxx, 2010.

**CONTRACT CHANGE ORDER MEMORANDUM**

DATE: 8/04/2009

Page 2 of 2

DC-CEM-4903 (OLD HC-39 REV. 6/93) CT# 7541-3544-0

<b>CONCURRED BY:</b>		<b>ESTIMATE OF COST</b>	
CONSTRUCTION ENGINEER Res. Eng. Gary Pursell, Sup. TE	5/5/10	THIS REQUEST	TOTAL TO DATE
SR. BRIDGE ENGINEER Rick Morrow, Struct. Rep.	DATE	ITEMS	\$0.00 \$0.00
FHWA REPRESENTATIVE	DATE	FORCE ACCOUNT	\$0.00 \$0.00
PROJECT MANAGER Proj. Manager, Ken Terpstra	5/5/10	AGREED PRICE	\$2,000,000.00 \$2,000,000.00
OTHER (SPECIFY)	DATE	ADJUSTMENT	\$0.00 \$0.00
		<b>TOTAL</b>	\$2,000,000.00 \$2,000,000.00
		<b>FEDERAL PARTICIPATION</b>	
		<input type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input checked="" type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (MAINTENANCE) <input type="checkbox"/> NON-PARTICIPATING	
		FEDERAL SEGREGATION (IF MORE THAN ONE FUNDING SOURCE OR P.I.P. TYPE)	
PCE, Peter Siegenthaler, Prin TE	5/5/10	<input type="checkbox"/> CCO FUNDED PER CONTRACT <input type="checkbox"/> CCO FUNDED AS FOLLOWS	
DISTRICT PRIOR APPROVAL BY	DATE	FEDERAL FUNDING SOURCE	PERCENT
HQ (ISSUE & APPROVE) (TO PROCEED) BY	DATE		
Larry Salhaney			
RESIDENT ENGINEER SIGNATURE	DATE		

HC-39 Word(Rev.9/96)

# Memorandum

**TO:** Toll Bridge Oversight Committee (TBPOC)      **DATE:** July 28, 2010

**FR:** Brian Maroney, Deputy Toll Bridge Program Manager, Caltrans

**RE:** Agenda No. - 2b  
Item Self-Anchored Suspension (SAS) Contract Change Order  
(CCO) No. 156 – Tower Bolt Replacement

**Recommendation:**  
**APPROVAL**

**Cost:**

Not to exceed \$10M

### Schedule Impacts:

TBD

### Discussion:

CCO No. 156 – Bolt Replacement is in the amount not to exceed \$10,000,000.

The Contract calls for bolt assemblies in the tower to be A490 fasteners with “Dacramet” coating. The coating was specified due to concerns of hydrogen embrittlement that can occur resulting in the galvanizing process. The Dacramet coating contains hexavalent chromium (Cr(VI)), which was recently learned to be an hazardous material.

In June 2010, when ABF and the Department Industrial Hygienists conducted tests for Cr(VI) levels in this operation, it was found that the levels did exceed the action levels, based on Personal Exposure Limits established by OSHA.

Due to the potential toxicity levels in the “Dacramet” coating specified, and the necessity to protect the employees involved in installing, inspecting, and testing these fasteners assemblies, there is a significant risk for inefficiency impacts and schedule delays for the tower erection.

Because of these newly identified risks to the project schedule, potential solutions are currently being developed. As an alternative to the Dacramet coating, fasteners may be substituted with a Geomet coating which is toxic free, or the use of uncoated fastener assemblies which need to be prime-painted after installation.

## *Memorandum*

Whichever system is finally adopted, new fasteners need to be ordered immediately. The cost of the fastener system consisting of bolt, nut, and washers is estimated to cost several million dollars, but it will not exceed \$10 million.

In the interest of limiting schedule delays, it is requested that this change be approved.

**Attachment(s):**

1. Draft CCO 156
2. Draft CCO Memorandum 156

**CONTRACT CHANGE ORDER**

Change Requested by: Engineer

CCO: 156    Suppl. No. 0    Contract No. 04 – 0120F4    Road SF-80-13.2/13.9    FED. AID LOC.:

To: **AMERICAN BRIDGE/FLUOR ENTERPRISES INC A JOINT VENTURE**

You are directed to make the following changes from the plans and specifications or do the following described work not included in the plans and specifications for this contract.

**NOTE: This change order is not effective until approved by the Engineer.**

Description of work to be done, estimate of quantities and prices to be paid. (Segregate between additional work at contract price, agreed price and force account.) Unless otherwise stated, rates for rental of equipment cover only such time as equipment is actually used and no allowance will be made for idle time. This last percentage shown is the net accumulated increase or decrease from the original quantity in the Engineer's Estimate.

**Extra Work at Lump Sum Price****DRAFT**

Replace the Dacromet coated ASTM A490M fastener assemblies as described below:

1. The Dacromet Coated ASTM A490M fastener assemblies required in Section 10-1.59, "Steel Structures," of the Special Provisions shall not be used for this Contract. They shall become the property of the Contractor and shall be disposed of in accordance with applicable law.
2. ASTM A490M fastener assemblies shall be purchased to replace the Dacromet coated assemblies above.
3. As necessary to reduce schedule impact and to temporarily provide the capacity necessary to continue erection of the tower, the bolts shall be replaced with temporary uncoated ASTM A490 fastener assemblies.
4. 332 extra uncoated ASTM A490M fastener assemblies left over from the testing in CCO 115 shall be shipped to the bolt supplier, shall be coated with Geomet, returned to the jobsite and tested to assure the similarity in assembly properties between Dacromet and Geomet.
5. 1000 Geomet coated ASTM A490 or A490M fastener assemblies shall be obtained for testing and shall be used for testing of dust levels by a Certified Industrial Hygienist.
6. If the results of the testing in items 4 and 5 above, confirm the similarity between Dacromet and Geomet and the safe dust levels for Geomet, the fastener assemblies in item 2 shall be coated using Geomet with a nut overlap as directed by the Engineer. In case the results are not satisfactory, assemblies shall be left uncoated.
7. If the assemblies are Geomet coated, requirements for Dacromet in the Special Provisions shall apply. If the bolts are uncoated, prime and finish coats will be required on the exterior and prime coats will be required for interior parts of the assemblies in accordance with the Standard Specifications and Special Provisions.
8. The temporary fastener assemblies will be replaced with the new permanent ASTM A490M fastener assemblies as necessary to minimize schedule impact.

Extra Work at Lump Sum Price (Not to Exceed).....\$10,000,000.00

The cost of this change has not yet been agreed.

Estimated Cost not to exceed:	Increase	<input checked="" type="checkbox"/>	Decrease	<input type="checkbox"/>	Est. \$10,000,000.00
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By reason of this order the time of completion will be adjusted as follows: 0 days

**Submitted by**

Signature	Senior Bridge Engineer	Mark Woods, Senior B.E.	Date
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**Approval Recommended by**

Signature	Supervising Bridge Engineer	Richard Morrow, Sup. B.E.	Date
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**Engineer Approval by**

Signature	Principal Transportation Engineer	Peter Siegenthaler, Prin. T.E.	Date
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We the undersigned contractor, have given careful consideration to the change proposed and agree, if this proposal is approved, that we will provide all equipment, furnish the materials, except as otherwise be noted above, and perform all services necessary for the work above specified, and will accept as full payment therefor the prices shown above.

**NOTE: If you, the contractor, do not sign acceptance of this order, your attention is directed to the requirements of the specifications as to proceeding with the ordered work and filing a written protest within the time therein specified.**

**Contractor Acceptance by**

Signature	(Print name and title)	Date
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**CONTRACT CHANGE ORDER MEMORANDUM**

DC-CEM-4903 (OLD HC-39 REV. 6/93) CT# 7541-3544-0

DATE

July 23, 2010

TO: Peter Siegenthaler, Prin. T.E.			FILE 04-0120F4		<b>DRAFT</b>
FROM Gary Pursell, Sup. T.E.			04-SF-80-13.2, 13.9		
CCO NO. <b>156</b>	SUPPLEMENT NO. <b>0</b>	CATEGORY CODE <b>CHSA</b>	CONTINGENCY BALANCE (including this change) <b>\$69,589,000.00</b>		
<b>\$10,000,000.00</b>			HEADQUARTERS APPROVAL REQUIRED? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
SUPPLEMENTAL FUNDS PROVIDED: \$ 0.00 CCO Description: Replace Dacromet A490M Bolts			IS THIS REQUEST IN ACCORDANCE WITH ENVIRONMENTAL DOCUMENTS? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		
Original Contract Time <b>2490</b> Day(s)	Time Adj.: This Change <b>0</b> Day(s)	Previously Approved CCO Time Adjustments <b>227</b> Day(s)	Percentage Time Adjusted: (including this change) <b>9%</b>	Total # of Unreconciled Deferred Time CCO(s): (including this change) <b>6</b>	

**THIS CHANGE ORDER PROVIDES FOR:**

Replacing the Dacromet coated ASTM A490M fastener assemblies required in Section 10-1.59, Steel Structures," of the Special Provisions with either uncoated or Geomet coated ASTM A490M fastener assemblies.

This Contract calls for the use of ASTM A490M fastener assemblies in the tower. Because A490 fasteners are subject to hydrogen embrittlement in the galvanizing process, the designers required the fasteners to be coated with Dacromet to provide the specified design life of 150 years. This coating has been used with some frequency in other industries, but only rarely in high strength structural bolts. In October 2006, OSHA issued a final rule for the Occupational Exposure to Hexavalent Chromium (Cr(VI)) establishing a Personal Exposure Limit for this toxic form of the element Chromium. Cr(VI) is an important component of the Dacromet coating system. It was anticipated that the Cr(VI) levels that existed in the Dacromet bolting operations would not exceed the action levels for this rule.

However in June 2010, when ABF and the Department Industrial Hygienists conducted tests for Cr(VI) levels in this operation, it was found that the levels did exceed the action levels. Due to the toxicity, extensive control measures would be necessary to protect the employees involved in installing, inspecting and testing these fastener assemblies. These practices would cause significant impacts on the efficiencies and scheduling for the Tower erection as well as health and other risks. Subsequent to the OSHA rules, the supplier of the Dacromet coating has developed a Cr(VI)-free system called Geomet. After a preliminary evaluation of the construction schedule and availability of temporary and replacement fastener assemblies, the Designer has recommended that Geomet coated A490M bolts be substituted. If there are still significant toxic exposures due to the use of Geomet, uncoated fastener assemblies could be used and painted after installation.

This Change Order was discussed with the following people, who all concurred with this Change Order:

1. Brian Maroney (Deputy Toll Bridge Program Manager)
2. Rich Foley (HQ Construction, SAS Oversight)
3. Keith Hoffman (METS)
4. Bill Zanetich (OSM&I)

A detailed cost breakdown from the Contractor has not been submitted at this time but will be in the file as the final cost is determined. The Department estimates an additional cost not to exceed \$10,000,000.00 for this change, which can be financed from the contingency fund.

No time adjustment is warranted, as this change order does not affect the controlling operation.

This change order will be presented to the Toll Bridge Program Oversight Committee (TBPOC) in August 2010 for their approval.

<b>CONCURRED BY:</b>		<b>ESTIMATE OF COST</b>	
STRUCTURE REPRESENTATIVE Rick Morrow	DATE	THIS REQUEST	TOTAL TO DATE
SR. BRIDGE ENGINEER	DATE	ITEMS	
		FORCE ACCOUNT	
FHWA REPRESENTATIVE	DATE	AGREED PRICE	\$10,000,000.00
		ADJUSTMENT	\$10,000,000.00
PROJECT ENGINEER Ken Terpstra	DATE	<b>TOTAL</b>	\$10,000,000.00
OTHER (SPECIFY)	DATE	<b>FEDERAL PARTICIPATION</b>	
		<input type="checkbox"/> PARTICIPATING <input type="checkbox"/> PARTICIPATING IN PART <input checked="" type="checkbox"/> NONE <input type="checkbox"/> NON-PARTICIPATING (MAINTENANCE) <input type="checkbox"/> NON-PARTICIPATING	
	DATE	FEDERAL SEGREGATION (IF MORE THAN ONE FUNDING SOURCE OR P.I.P. TYPE)	
		<input type="checkbox"/> CCO FUNDED PER CONTRACT <input type="checkbox"/> CCO FUNDED AS FOLLOWS	
DISTRICT PRIOR APPROVAL BY	DATE	FEDERAL FUNDING SOURCE	PERCENT
HQ (ISSUE & APPROVE) (TO PROCEED) BY Larry Salhaney	DATE	_____	_____
RESIDENT ENGINEER SIGNATURE	DATE	_____	_____
		_____	_____

## *Memorandum*

**TO:** Toll Bridge Program Oversight Committee (TBPOC)      **DATE:** July 28, 2010

**FR:** Andrew Fremier, Deputy Director, BATA

**RE:** Agenda No. - 3  
Draft TBSRP 2010 Second Quarter Project Progress and Financial  
Item- Update

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**Recommendation:**

For Information Only

**Cost:**

N/A

**Schedule Impacts:**

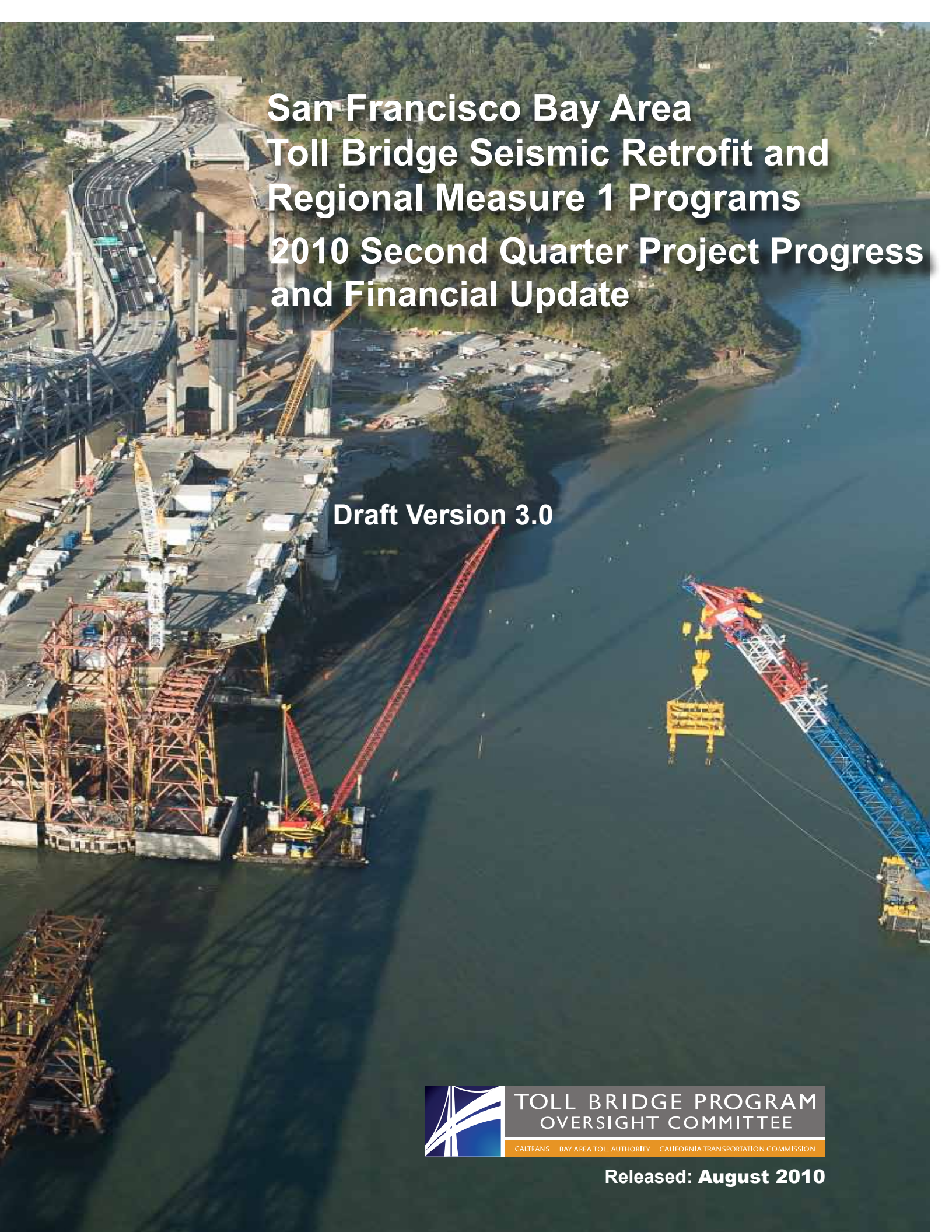
N/A

**Discussion:**

Attached, for TBPOC information, is a Draft TBSRP 2010 Second Quarter Project Progress and Financial Update. The report has yet to include the current costs. It is scheduled for distribution on August 13, 2010.

**Attachment(s):**

Draft TBSRP 2010 Second Quarter Project Progress and Financial Update



# San Francisco Bay Area Toll Bridge Seismic Retrofit and Regional Measure 1 Programs 2010 Second Quarter Project Progress and Financial Update

Draft Version 3.0



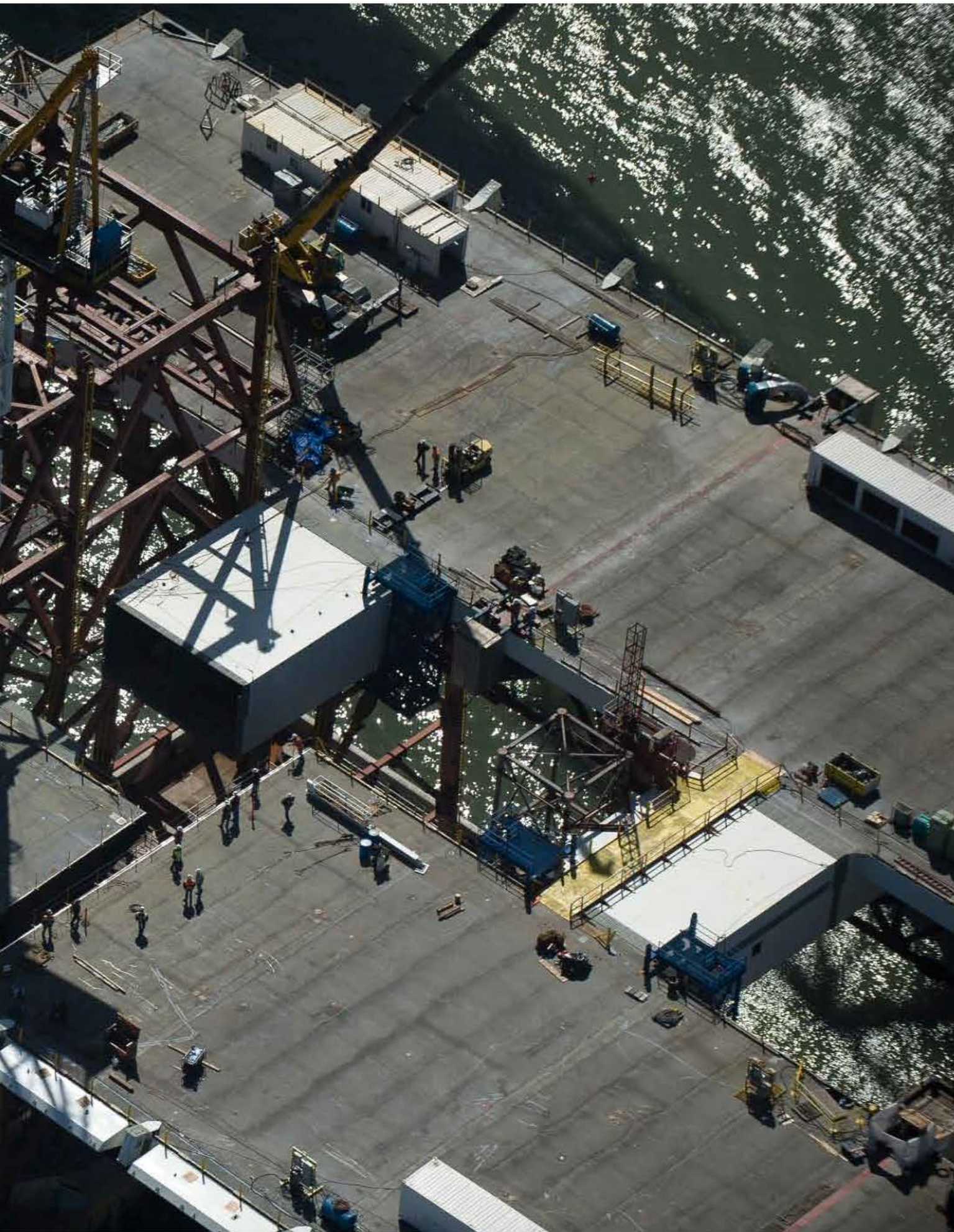
**TOLL BRIDGE PROGRAM  
OVERSIGHT COMMITTEE**

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

**Released: August 2010**



Shearleg Crane Barge Placing Westbound Roadway Box #6





Toll Bridge Program Oversight Committee  
Department of Transportation  
Office of the Director  
1120 N Street  
P.O. Box 942873  
Sacramento, CA 94273-0001

August 13, 2010

Mr. Gregory Schmidt  
Secretary of the Senate  
State Capitol, Room 3044  
Sacramento, CA 95814

Mr. E. Dotson Wilson  
Chief Clerk of the Assembly  
State Capitol, Room 3196  
Sacramento, CA 95814

Dear Messrs. Schmidt and Wilson:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2010 Second Quarter Toll Bridge Seismic Retrofit Program Report, prepared pursuant to California Streets and Highways Code Section 30952. The TBPOC is tasked to perform project oversight and control over the Toll Bridge Seismic Retrofit Program (TBSRP) and comprises the Director of the Department of Transportation (Caltrans), the Executive Director of the Bay Area Toll Authority (BATA), and the Executive Director of the California Transportation Commission (CTC). This first quarter report includes project progress and activities for the Toll Bridge Seismic Retrofit Program through June 30, 2010.

On the San Francisco-Oakland Bay Bridge East Span Replacement Project, significant progress is being made both here in the Bay Area and around the world. Over the last quarter, the first sections of the signature tower were shipped from Shanghai, China. These sections join 12 of 28 steel roadway boxes that have already arrived in the Bay Area. While each shipment represents a major step forward for the project, we continue to be mindful of the challenges that still remain for the project, such as completion of the last four roadway boxes that have just started fabrication.

With our goal of achieving seismic safety by moving traffic off the old bridge and onto the new as soon as possible, we are exploring all risk mitigating and acceleration options to get the new bridge to traffic by our 2013 target. One option being discussed is a "seismic safety opening" of the bridge open to traffic before non-essential systems are completed, like architectural lighting or removal of unneeded temporary supports structures. We will continue to report to you on our progress on the project in subsequent reports.

For the second quarter of 2010, our comprehensive risk assessment of the project has identified a range from \$300 to \$700 million in risks to the program contingency. It is important to note that our \$708.1 million in budgeted program contingency is sufficient to cover the cost of identified risks.

We continue to make excellent progress on the seismic retrofit of the Antioch and Dumbarton bridges, the two newest bridges to be added to the TBSRP by AB 1175. Work has started on the Antioch Bridge retrofit contract, while the Department is in the process of awarding the Dumbarton Bridge retrofit contract.

The TBPOC is committed to providing the Legislature with comprehensive and timely reporting on the TBSRP. If there are any questions, or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,

STEVE HEMINGER  
TBPOC Chair  
Executive Director  
Bay Area Toll Authority

BIMLA G. RHINEHART  
TBPOC Vice-Chair  
Executive Director  
California Transportation Commission

CINDY MCKIM  
Chief Deputy Director  
California Department of Transportation



Toll Bridge Program Oversight Committee  
Department of Transportation  
Office of the Director  
1120 N Street  
P.O. Box 942873  
Sacramento, CA 94273-0001

August 13, 2010

Mr. James Earp, Chair  
California Transportation Commission  
1120 N Street, Room 2221  
Sacramento, CA 95814

Mr. Dario Frommer, Vice-Chair  
California Transportation Commission  
1120 N Street, Room 2221  
Sacramento, CA 95814

Dear Commissioners Earp and Frommer:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2010 Second Quarter Toll Bridge Seismic Retrofit Program Report, prepared pursuant to California Streets and Highways Code Section 30952. The TBPOC is tasked to perform project oversight and control over the Toll Bridge Seismic Retrofit Program (TBSRP) and comprises the Director of the Department of Transportation (Caltrans), the Executive Director of the Bay Area Toll Authority (BATA), and the Executive Director of the California Transportation Commission (CTC). This first quarter report includes project progress and activities for the Toll Bridge Seismic Retrofit Program through June 30, 2010.

On the San Francisco-Oakland Bay Bridge East Span Replacement Project, significant progress is being made both here in the Bay Area and around the world. Over the last quarter, the first sections of the signature tower were shipped from Shanghai, China. These sections join 12 of 28 steel roadway boxes that have already arrived in the Bay Area. While each shipment represents a major step forward for the project, we continue to be mindful of the challenges that still remain for the project, such as completion of the last four roadway boxes that have just started fabrication.

With our goal of achieving seismic safety by moving traffic off the old bridge and onto the new as soon as possible, we are exploring all risk mitigating and acceleration options to get the new bridge to traffic by our 2013 target. One option being discussed is a "seismic safety opening" of the bridge open to traffic before non-essential systems are completed, like architectural lighting or removal of unneeded temporary supports structures. We will continue to report to you on our progress on the project in subsequent reports.

For the second quarter of 2010, our comprehensive risk assessment of the project has identified a range from \$300 to \$700 million in risks to the program contingency. It is important to note that our \$708.1 million in budgeted program contingency is sufficient to cover the cost of identified risks.

We continue to make excellent progress on the seismic retrofit of the Antioch and Dumbarton bridges, the two newest bridges to be added to the TBSRP by AB 1175. Work has started on the Antioch Bridge retrofit contract, while the Department is in the process of awarding the Dumbarton Bridge retrofit contract.

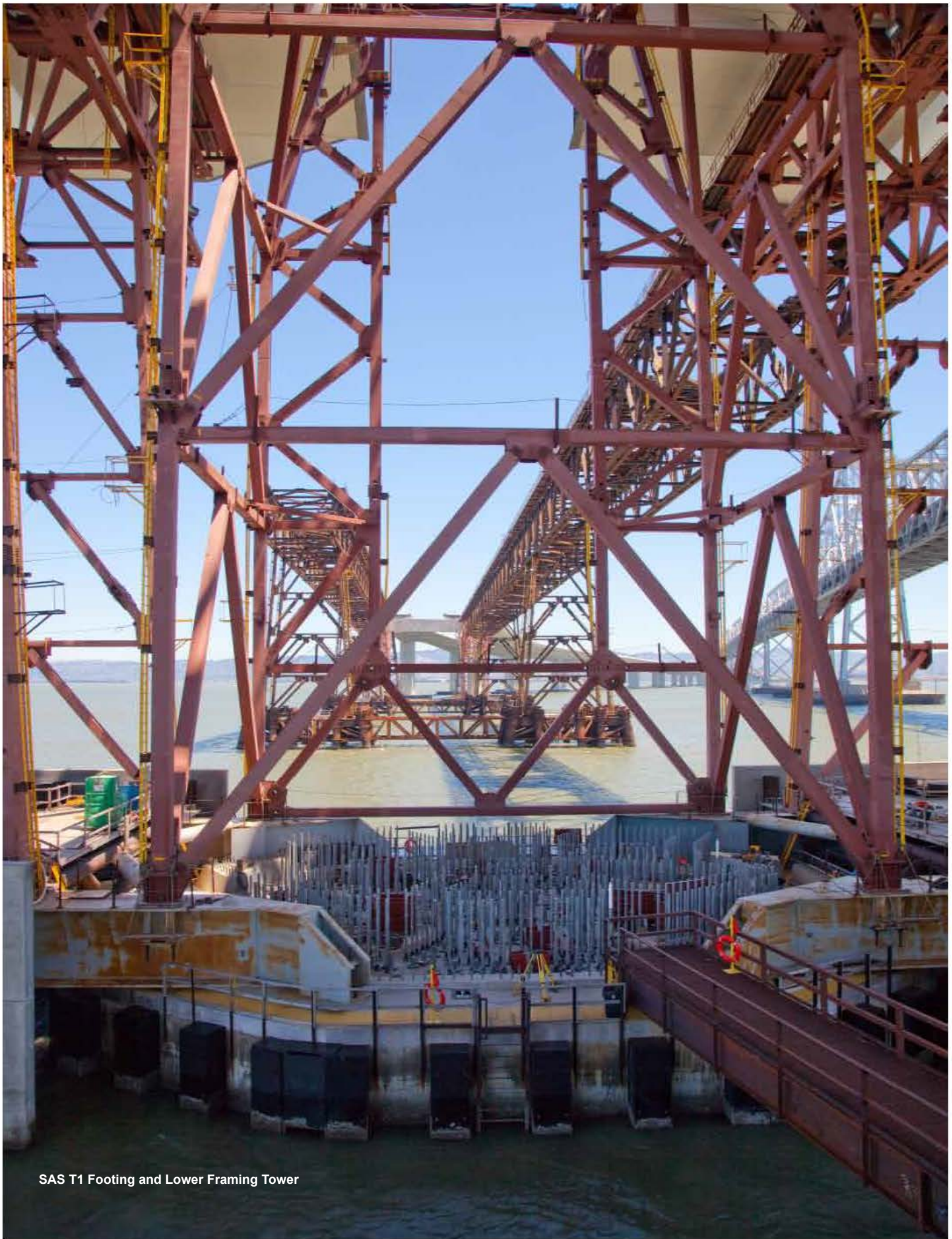
The TBPOC is committed to providing the Legislature with comprehensive and timely reporting on the TBSRP. If there are any questions, or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,

STEVE HEMINGER  
TBPOC Chair  
Executive Director  
Bay Area Toll Authority

BIMLA G. RHINEHART  
TBPOC Vice-Chair  
Executive Director  
California Transportation Commission

CINDY MCKIM  
Chief Deputy Director  
California Department of Transportation

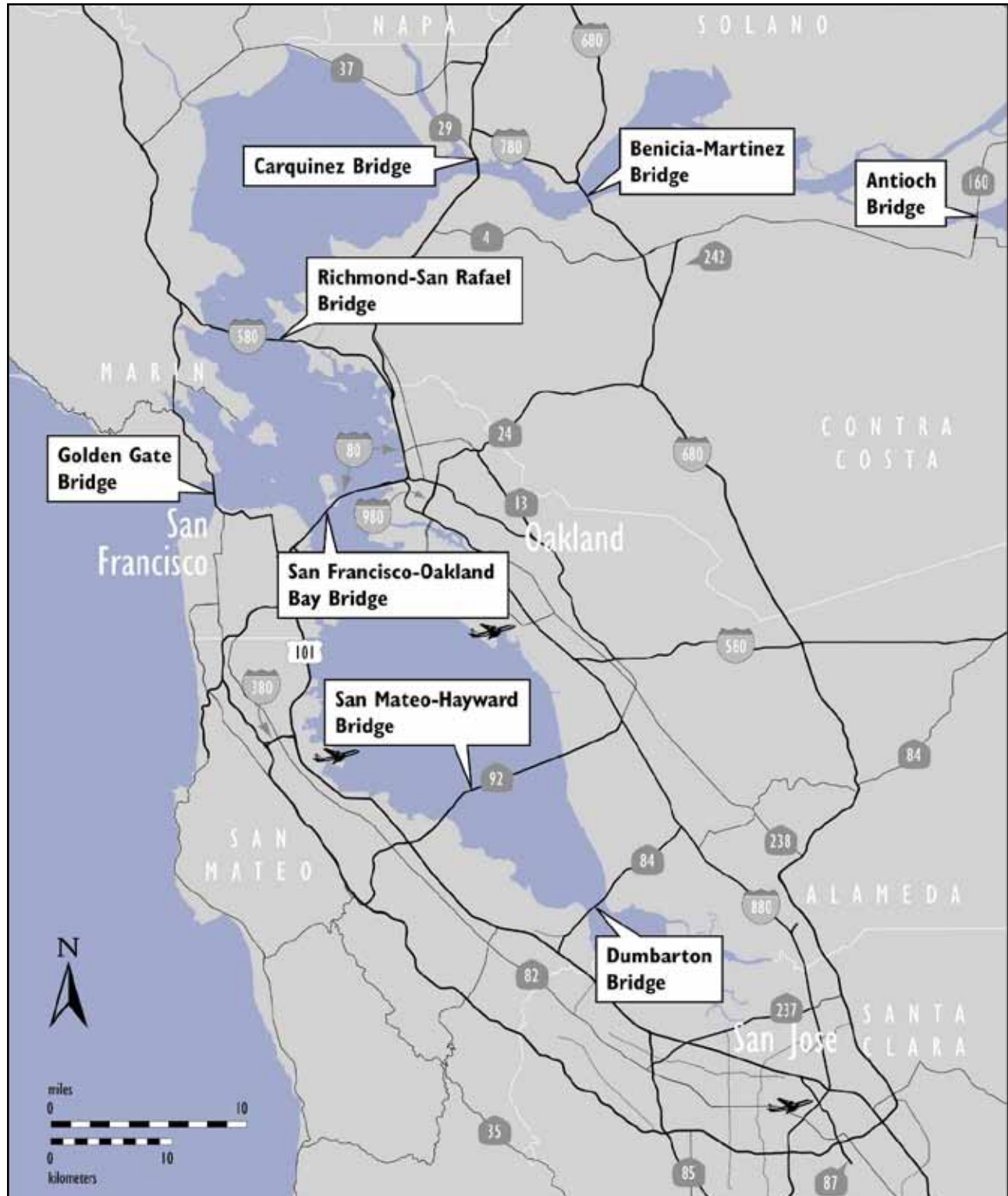


SAS T1 Footing and Lower Framing Tower

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## Map of Bay Area Toll Bridges



\* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway, and Transportation District.

## Introduction

In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the Committee) and preparing project reports. AB 144 identified the Toll Bridge Seismic Retrofit Program (TBSRP) and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. In January 2010, Assembly Bill (AB) 1175 (Torlakson) amended the TBSRP to include the Antioch and Dumbarton seismic retrofit projects. The current Toll Bridge Seismic Retrofit Program is as follows:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
Dumbarton Bridge Seismic Retrofit	Open
Antioch Bridge Seismic Retrofit	Construction
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The new Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans will continue to report on their progress as an informational item. The RM1 program includes:

Regional Measure 1 Projects	Open to Traffic Status
Interstate 880/State Route 92 Interchange Reconstruction	Construction
1962 Benicia-Martinez Bridge Reconstruction	Open
New Benicia-Martinez Bridge	Open
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open

## SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



T1 Lift 1 Shafts Stored on Barge at Pier 7



SAS Shearleg Crane Lifting Westbound Roadway Box



SAS Roadway Box Being Placed by Shearleg Crane Barge

### Toll Bridge Seismic Retrofit Program Risk Management

A major element of the 2005 AB144, the law creating the TBPOC, was legislative direction to implement a more aggressive risk management program. Such a program has been implemented in stages over time to ensure development of a robust and comprehensive approach to risk management. A milestone has been reached in the risk management program with all elements now fully incorporated, resulting in one of the most detailed and comprehensive risk management programs in the country today.

A comprehensive risk assessment is performed for each project in the program. Based upon those assessments, a forecast is developed using the average cost of risk. These forecasts can both increase and decrease as risks are identified, resolved or retired. Nonetheless, assurances have been made that the public is informed of the risks that have been identified and the possible expense they could necessitate.

As of the end of the first quarter 2010, the 50 percent probable draw on program contingency is \$526 million with a potential draw that ranges from about \$300 million to \$700 million. The total current program contingency budget is \$948 million, which was recently increased by \$190 million with the inclusion of the Antioch Bridge and Dumbarton Bridge retrofits into the Toll Bridge Seismic Retrofit Program (TBSRP).

Given the current program contingency budget balance, there are sufficient funds to cover the cost of identified risks. Risk mitigation actions are continuously being developed and implemented to reduce the potential draw on the contingency.

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Replacement Project SAS Superstructure Contract

The prime contractor constructing the Self-Anchored Suspension (SAS) Bridge from the completed Skyway to Yerba Buena Island is a joint venture of American Bridge/Fluor (ABF). Significant progress is being made both here in the Bay Area and around the world. The first 12 of 28 steel roadway boxes have arrived with 12 already having been lifted into place. These boxes, fabricated in Shanghai, China, join other bridge components that have been arriving from around the country and the world. Shipments of roadway



SFO Bay Bridge Detour Structure Completed over the Labor Day Weekend

and tower boxes will continue throughout the year. The first shipment of tower boxes arrived in San Francisco Bay on the July 29th. All bridge components undergo a rigorous quality review by the fabricator, ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped.

The completion of the last roadway sections at the east end of the new span are on the critical path and the east end fabrication has been delayed due to the complexity of the work. The TBPOC is taking aggressive steps to mitigate the delay and accelerate the remaining work.

Caltrans has established risk management teams to identify and evaluate the challenges and future potential risks to completing the project on time and on budget. In particular, teams are reviewing cable-erection plans and mitigation actions. Based on the latest risk management assessment, there is a potential for a \$293 million increase on the SAS contract.

## Yerba Buena Island Detour Contract

The Yerba Buena Island Detour contractor, C.C. Myers, has rolled out the existing bridge span and rolled in the new east tie-in span of the detour structure that diverts traffic off the existing bridge to the detour structure that now ties into the Yerba Buena Island Tunnel. The traffic switch occurred as scheduled on Labor Day weekend. Work is completed on the demolition of the old approach span and construction continues on a number of accelerated foundations for the future transition structures from the Self-Anchored Suspension (SAS) bridge to the tunnel. Upon removal of the old approach span and completion of future accelerated transition structure columns, the area will be turned over to the Yerba Buena Island Transition Structures (YBITS) #1 contractor that will construct the new approach structures.

## Yerba Buena Island Transition Structures #1 Contract

The YBITS#1 contract has been awarded to MCM Construction, the same contractor completing the Oakland Touchdown (OTD) #1 contract. Construction will not start until the demolition of the existing approach and YBITS advanced columns have been completed. Caltrans and the contractor are in the submittal and planning process for the contract. Construction is scheduled to start on September 2010.

## SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



Oakland Touchdown #1 Bike Path and Hand Railing



Oakland Touchdown #1 Service Platforms Installed



Aerial View of Oakland Touchdown #1 looking East

### Oakland Touchdown #1 Contract

The Oakland Touchdown (OTD) #1 contractor, MCM Construction completed the work on June 8, 2010. The contract constructed the westbound approach from the toll plaza to the Skyway structure and the portion of the eastbound approach that is not in conflict with the existing bridge structure. The remaining approach work will be completed by a future OTD #2 contract.

### TBSRP Capital Outlay Support

Based on initial discussions with the contractors, early completion of the East Span Project was believed to be possible and sufficient to mitigate potential identified support cost increases. The support cost increases are primarily due to the need to re-advertise the SAS contract, and to decisions made to increase opportunities for early completion of the East Span Project. These decisions include a 12-month schedule extension provided during bid time to attract the maximum number of bidders for the SAS contract, and an extension of the YBI Detour contract to advance future foundation and column work of the transition structure and west-end deck reconstruction. Since early completion and the intended cost savings are deemed to be unlikely, action was taken to transfer program contingency funds to cover the costs by the end of the second quarter of 2010. Opportunities to economize and reduce costs in this area will continue to be pursued.

### TBSRP Programmatic Risks

This category includes risks that are not yet scoped within existing contracts and/or that spread across multiple contracts. The interdependencies between all of the contracts in the program result in the potential for one contract's delay to impact the entire program that are accounted for in the net programmatic risks.



Dumbarton Bridge



Antioch Bridge



92/880 Separation Bridge

## Dumbarton Bridge Seismic Retrofit

When first conceived, the Toll Bridge Seismic Retrofit Program only identified seven of the nine state owned toll bridges to be in need of seismic retrofit, which excluded the Dumbarton and Antioch Bridges. Further seismic vulnerability studies on those structures completed by Caltrans and BATA determined that they were in need of retrofit based on current seismic standards.

On October 11, 2009, Governor Schwarzenegger signed Assembly Bill 1175, which added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. In part to fund these seismic retrofits, a toll increase on the seven state-owned toll bridges in the Bay Area will go into effect on July 1, 2010. Bids for the Dumbarton Bridge Seismic Retrofit were opened on June 15, 2010. The lowest bids were substantially lower than the engineer's estimate. Caltrans is in the process of evaluating the bids to determine the lowest responsive bidder.

## Antioch Bridge Seismic Retrofit

Bids for the Antioch Bridge Retrofit Contract were opened on March 10, 2010. The contract was awarded to California Engineering Contractors, Inc. on April 22, 2010. The awarded contract was significantly less than the engineer's estimate for the work and has resulted in a significant cost forecast reduction. The TBPOC is recommending that the budget for the project be reduced to account for the low bid. The original budget for the project was \$267 million. Because of the low bid, the TBPOC is forecasting a need of only **\$98 million**. The retrofit is forecast to be completed by May 2012.

## Regional Measure 1 Toll Bridge Program (RM1)

### Interstate 880/State Route 92 Interchange Reconstruction Project

On this interchange reconstruction project, the new eastbound State Route 92 to northbound Interstate 880 direct connector structure (ENCONN) was completed and opened to detour traffic on May 16, 2009, while the southern half of the new separation structure was opened in April 2010 to detour traffic. Work is now ongoing on the remaining northern half of the separation structure. The project is forecast to be substantially completed as planned in June 2011, pending weather or unforeseen construction delays.

## Toll Bridge Seismic Retrofit Program Cost Summary

	Contract Status	AB 144/SB 66 Budget (July 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (June 2010)	Cost to Date (May 2010)	Current Cost Forecast (June 2010)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>SFOBB East Span Seismic Replacement</b>								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-	●
SAS Marine Foundations	Completed	313.5	(32.6)	280.9	274.8	280.9	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	1,021.3	2,046.8	293.1	●
YBI Detour	Construction	132.0	360.9	492.9	436.5	489.4	(3.5)	●
YBI Transition Structures (YBITS)		299.3	(93.0)	206.3	4.7	238.4	32.1	●
YBITS 1	Construction			144.0	4.7	164.3	20.3	●
YBITS 2	Design			59.0	-	70.8	11.8	●
YBITS Landscaping	Design			3.3	-	3.3	-	●
Oakland Touchdown (OTD)		283.8	4.2	288.0	207.5	282.1	(5.9)	●
OTD 1	Completed			212.0	199.6	208.9	(3.1)	●
OTD 2	Design			62.0	-	59.2	(2.8)	●
OTD Electrical Systems	Design			4.4	-	4.4	-	●
Submerged Electric Cable	Completed			9.6	7.9	9.6	-	●
Existing Bridge Demolition	Design	239.2	(0.1)	239.1	-	233.0	(6.1)	●
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.7	18.3	-	●
Other Completed Contracts	Completed	90.3	-	90.3	89.2	90.4	0.1	●
Capital Outlay Support		959.3	203.1	1,162.4	846.1	1,272.2	109.8	●
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.2	72.4	-	●
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	●
<b>Total SFOBB East Span Replacement</b>		<b>5,486.6</b>	<b>403.5</b>	<b>5,890.1</b>	<b>4,185.6</b>	<b>6,285.7</b>	<b>395.6</b>	
<b>Antioch Bridge Seismic Retrofit</b>								
Capital Outlay Construction and Mitigation	Construction	-	70.0	70.0	-	62.5	(7.5)	●
Capital Outlay Support		-	31.0	31.0	15.6	35.5	4.5	●
<b>Total Antioch Bridge Seismic Retrofit</b>		<b>-</b>	<b>101.0</b>	<b>101.0</b>	<b>15.6</b>	<b>98.0</b>	<b>(3.0)</b>	
<b>Dumbarton Bridge Seismic Retrofit</b>								
Capital Outlay Construction and Mitigation	Advertised	-	270.0	270.0	0.3	92.7	(177.3)	●
Capital Outlay Support		-	95.0	95.0	21.6	95.0	-	●
<b>Total Dumbarton Bridge Seismic Retrofit</b>		<b>-</b>	<b>365.0</b>	<b>365.0</b>	<b>21.9</b>	<b>187.7</b>	<b>(177.3)</b>	
Other Program Projects		2,268.4	(64.7)	2,203.7	2,158.2	2,191.7	(12.0)	●
Miscellaneous Program Costs		30.0	-	30.0	24.8	30.0	-	●
Net Programmatic Risks		-	-	-	-	201.8	201.8	●
Program Contingency		900.0	(191.9)	708.1	-	303.1	(405.0)	●
<b>Total Toll Bridge Seismic Retrofit Program</b>		<b>8,685.0</b>	<b>613.0</b>	<b>9,298.0</b>	<b>6,406.1</b>	<b>9,298.0</b>	<b>-</b>	●

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

## Toll Bridge Seismic Retrofit Program Schedule Summary

	AB144/SB 66 Project Completion Schedule Baseline (July 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completed Schedule (June 2010)	Current Completion Forecast (June 2010)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i=g+h	j	k=j-i	l	
<b>SFOBB East Span Seismic Replacement</b>							
Contract Completion							
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●	See Page 28
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 18
SAS Superstructure	Mar 2012	12	Mar 2013	Oct 2013	7	●	See Page 19
YBI Detour	Jul 2007	41	Dec 2010	Dec 2010	-	●	See Page 15
YBI Transition Structures (YBITS)	Nov 2013	12	Nov 2014	Mar 2015	4		See Page 16
YBITS 1			Sep 2013	Dec 2013	3	●	
YBITS 2			Nov 2014	Mar 2015	4	●	
YBITS Landscaping			TBD	TBD	-	●	
Oakland Touchdown	Nov 2013	12	Nov 2014	Mar 2015	4		See Page 29
OTD 1			May 2010	June 2010	1	●	
OTD 2			Nov 2014	Mar 2015	4	●	
OTD Electrical Systems			TBD	TBD	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	12	Sep 2015	Dec 2015	3	●	
Stormwater Treatment Measures	Mar 2008	-	Mar 2008	Mar 2008	-	●	
<b>SFOBB East Span Bridge Opening and Other Milestones</b>							
OTD Westbound Access			Aug 2009	Aug 2009	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See Page 15
Westbound Open	Sep 2011	12	Sep 2012	April 2013	7	●	
Eastbound Open	Sep 2012	12	Sep 2013	Dec 2013	3	●	
<b>Antioch Bridge Seismic Retrofit</b>							
Contract Completion			Aug 2012	May 2012	(3)	●	See Page 34
<b>Dumbarton Bridge Seismic Retrofit</b>							
Contract Completion			Sep 2013	Sep 2013	-	●	See Page 35

Notes: 1) Figures may not sum up to totals due to rounding effects.

2) TBSRP Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with quarterly risk analysis assessments for the TBSRP Projects.

## Regional Measure 1 Program Cost Summary

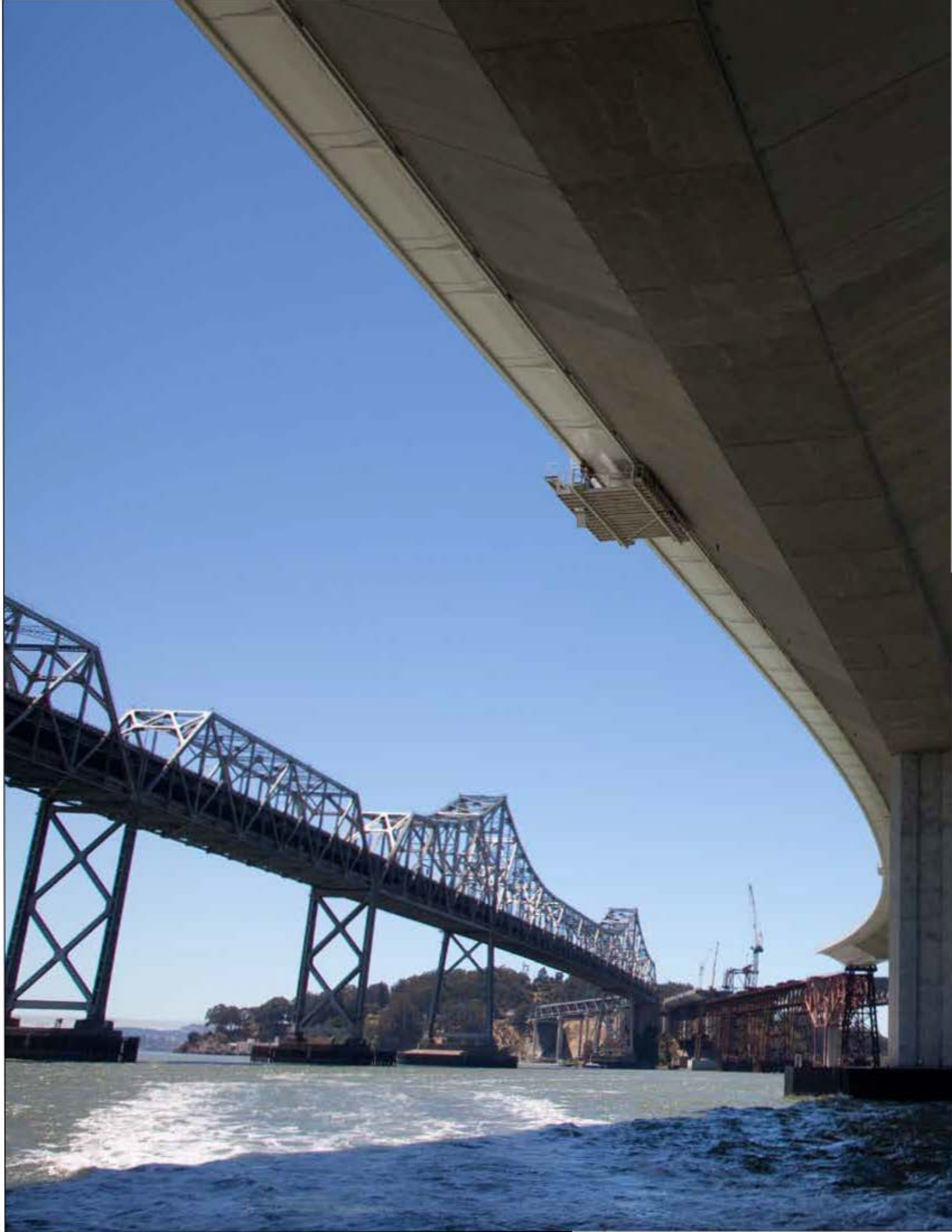
	Contract Status	BATA Baseline Budget (July 2005)	BATA Approved Changes	Current BATA Approved Budget (May 2010)	Cost to Date (May 2010)	Current Cost Forecast (May 2010)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
<b>Interstate 880/Route 92 Interchange Reconstruction</b>								
Capital Outlay Construction	Construction	94.8	60.2	161.0	95.0	161.0	-	●
Capital Outlay Support		28.8	34.6	63.4	53.6	63.4	-	●
Capital Outlay Right-of-Way		9.9	7.0	16.9	12.3	16.9	-	●
Project Reserve		0.3	3.4	3.7	-	3.7	-	
<b>Total I-880/SR-92 Interchange Reconstruction</b>		<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>160.9</b>	<b>245.0</b>	-	
<b>Other Completed Program Projects</b>		<b>1,978.8</b>	<b>182.6</b>	<b>2,161.4</b>	<b>2,086.5</b>	<b>2,161.4</b>	-	
<b>Total Regional Measure 1 Toll Bridge Program</b>		<b>2,112.6</b>	<b>293.8</b>	<b>2,406.4</b>	<b>2,247.4</b>	<b>2,406.4</b>	-	

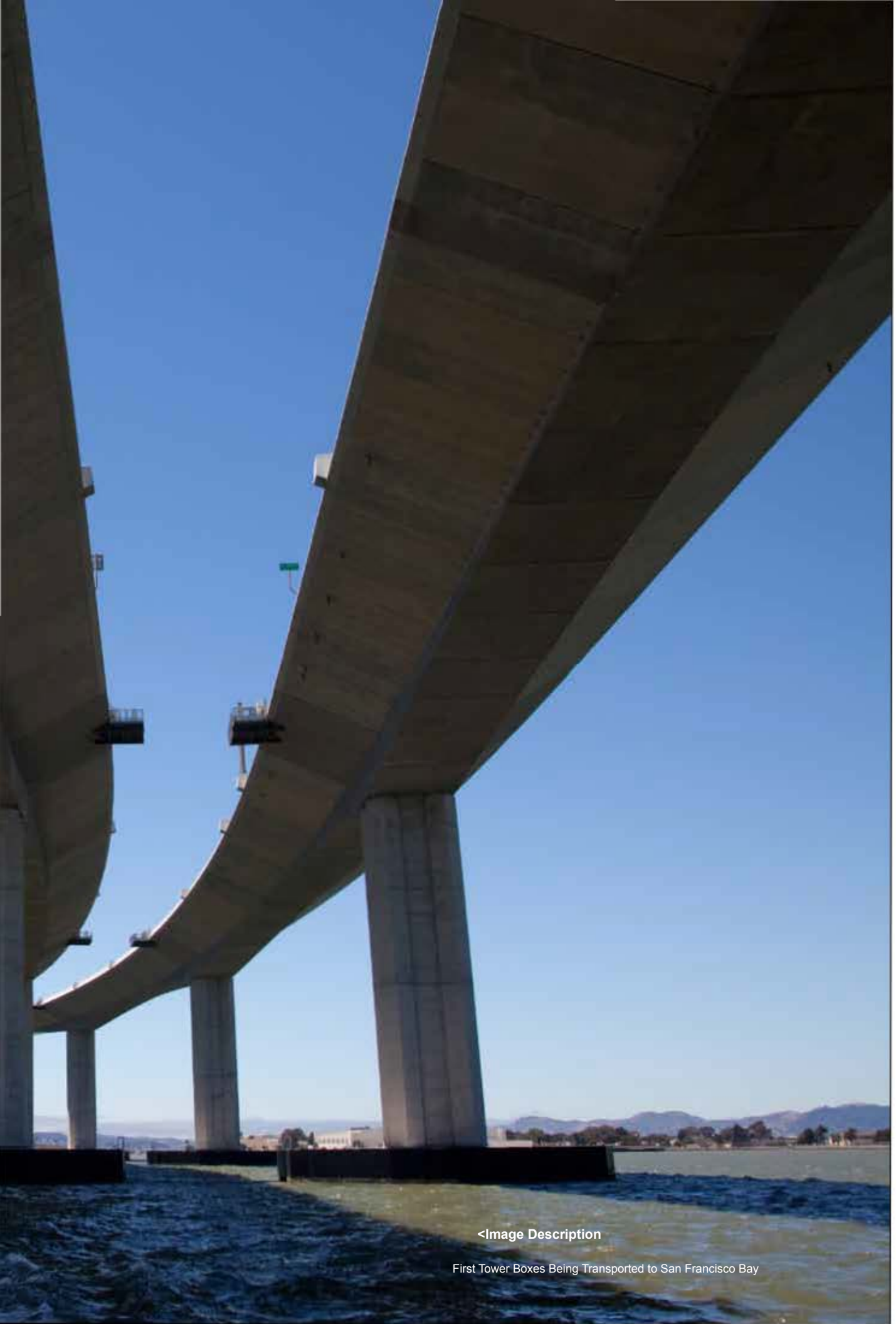
- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

## Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (July 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (May 2010)	Current Completion Forecast (May 2010)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i=g+h	j	k=j-i	l	
<a href="#">Interstate 880/Route 952 Interchange Reconstruction</a>							
Contract Completion							
Interchange Reconstruction	Dec 2010	6	Jun 2011	Jun 2011	-	●	See Page 40

Notes: 1) Figures may not sum up to totals due to rounding effects.





<Image Description

First Tower Boxes Being Transported to San Francisco Bay

# TOLL BRIDGE SEISMIC RETROFIT PROGRAM

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy

When a 250-ton section of the upper deck of the East Span collapsed during the 7.1-magnitude Loma Prieta Earthquake in 1989, it was a wake-up call for the entire Bay Area. While the East Span quickly reopened within a month, critical questions lingered: How could the Bay Bridge—a vital regional lifeline structure—be strengthened to withstand the next major earthquake? Seismic experts from around the world determined that to make each separate element seismically safe on a bridge of this size, the work must be divided into numerous projects. Each project presents unique challenges. Yet there is one common challenge — the need to accommodate the more than 280,000 vehicles that cross the bridge each day.



West Approach Overview

#### West Approach Seismic Replacement Project

**Project Status: Completed 2009**

Seismic safety retrofit work on the West Approach in San Francisco—bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street—involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on- and off-ramps within the confines of the West Approach's original footprint. This project was completed on April 8, 2009.

#### West Span Seismic Retrofit Project

**Project Status: Completed 2009**

The West Span lies between Yerba Buena Island and San Francisco and is made up of two complete suspension spans connected at a center anchorage. Retrofit work included adding massive amounts of steel and concrete to strengthen the entire West Span, along with new seismic shock absorbers and bracing.



San Francisco-Oakland Bay Bridge West Span

## East Span Seismic Replacement Project

Rather than a seismic retrofit, the two-mile long East Span is being completely rebuilt. When completed, the new East Span will consist of several different sections, but will appear as a single streamlined span. The eastbound and westbound lanes of the East Span will no longer include upper and lower decks. The lanes will instead be parallel, providing motorists with expansive views of the bay. These views will also be enjoyed by bicyclists and pedestrians, thanks to a new path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span will be aligned north of the existing bridge to allow traffic to continue to flow on the existing bridge as crews build the new span.

The new span will feature the world's longest Self-Anchored Suspension (SAS) bridge that will be connected to an elegant roadway supported by piers (Skyway), which will gradually slope down toward the Oakland shoreline (Oakland Touchdown). A new transition structure on Yerba Buena Island (YBI) will connect the SAS to the YBI Tunnel and will transition the East Span's side-by-side traffic to the upper and lower decks of the tunnel and West Span.

When construction of the new East Span is complete and vehicles have been safely rerouted to it, the original East Span will be demolished.



Architectural Rendering of the New East Span of the San Francisco-Oakland Bay Bridge

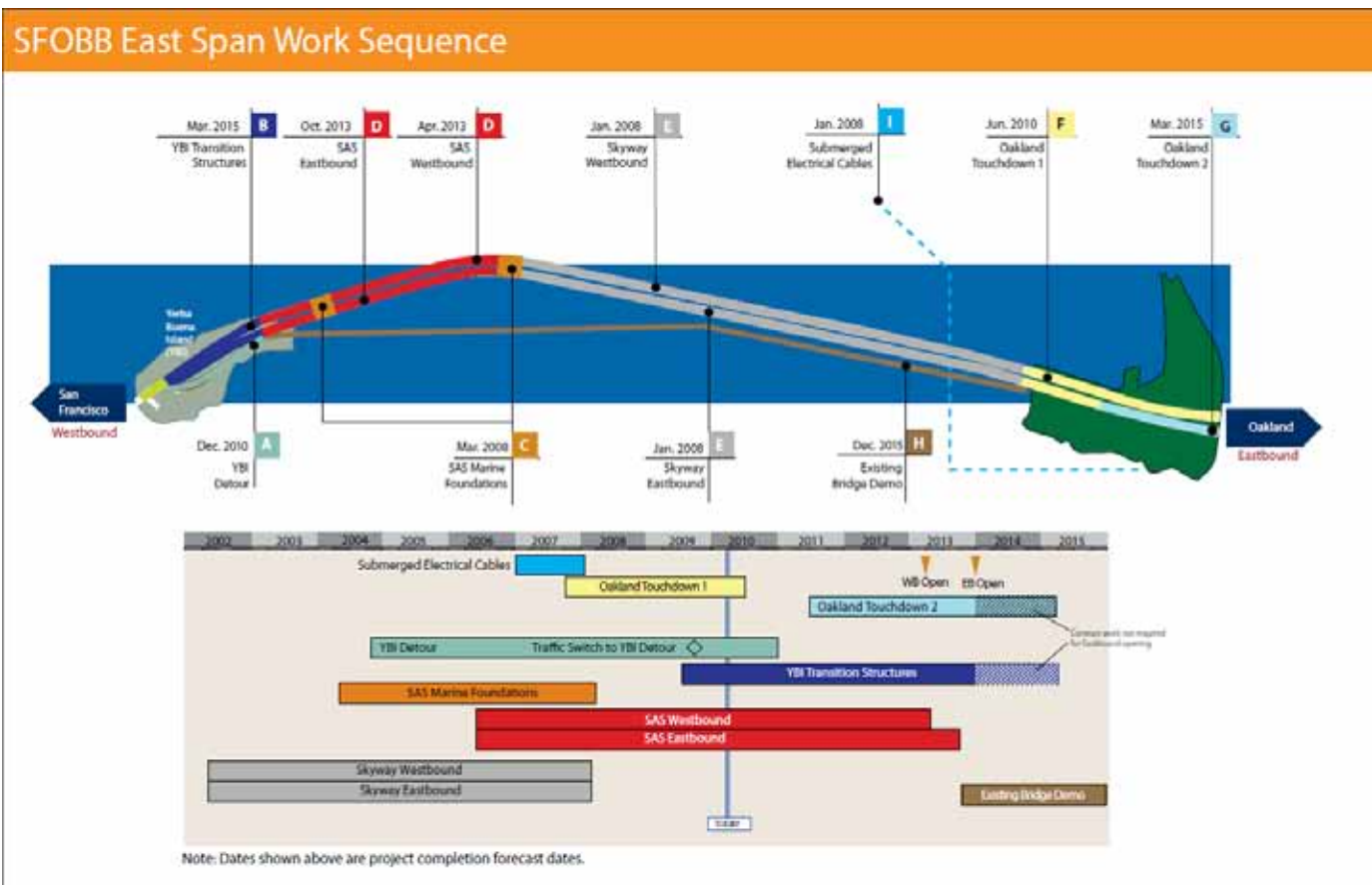


## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components—the Skyway and the Self-Anchored Suspension bridge in the middle and the Yerba Buena Island Transition Structures and Oakland Touchdown approaches at either end. Each component is being constructed by one to three separate contracts that all have been sequenced together.

Highlighted below are the major East Span contracts and their schedules. The letter designation before each contract corresponds to contract descriptions in the report.



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Detour (YBID)

As with all of the Bay Bridge's seismic retrofit projects, crews must build the Yerba Buena Island Transition Structures (YBITS) without disrupting traffic. To accomplish this task, YBID eastbound and westbound traffic was shifted off the existing roadway and onto a temporary detour on Labor Day weekend 2009. Drivers will use this detour, just south of the original roadway, until traffic is moved onto the new East Span.

#### A YBID Contract

Contractor: C.C. Myers Inc

Approved Capital Outlay Budget: \$492.9 M

Status: 96% Complete as of July 2010

This contract was originally awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Due to the re-advertisement of the SAS superstructure contract in 2005 because of a lack of funding at the time, the bridge opening was rescheduled to 2013. To better integrate the contract into the current East Span schedule and to improve seismic safety and mitigate future construction risks, the TBPOC has approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over Labor Day weekend 2007, advancing future transition structure foundation work and making design enhancements to the temporary detour structure. These changes have increased the budget and forecast for the contract to cover the revised project scope and potential project risks.



West Tie-In Phase #1 Rolled out on Labor Day 2007

#### ***Tunnel Approach Roadway Replacement***

The first in a series of activities to open the detour viaduct was completed in 2007 with the replacement of a 350-foot-long stretch of upper-deck roadway just east of the Yerba Buena Island Tunnel. During this historic milestone, the entire Bay Bridge was closed over the 2007 Labor Day weekend so crews could demolish and replace the old section of the deck with a seismically upgraded 6,500-ton precast section of viaduct that was literally pushed into place (see photo above).

**Status:** Completed.

#### ***Detour Viaduct Fabrication and Construction***

The "S-Curve" detour viaduct runs parallel to the alignment of the old approach structure from the tunnel to the cantilever spans of the East Span. The viaduct looks similar to the structure it is replacing with steel cross beams and girders and upper and lower concrete roadway decks.

The final 288-foot portion of the detour truss was rolled into place during a full bridge closure over Labor Day Weekend in 2009. Speed limits have been reduced on the viaduct to take the new alignment into account.

**Status:** Completed.

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Transition Structures (YBITS)

The new Yerba Buena Island Transition Structures (YBITS) will connect the new SAS bridge span to the existing Yerba Buena Island Tunnel, transitioning the new side-by-side roadway decks to the upper and lower decks of the tunnel. The new structures will be cast-in-place reinforced concrete structures that will look very similar to the already constructed Skyway structures. While some YBITS foundations and columns have been advanced by the YBID contract, the remaining work will be completed under three separate YBITS contracts.

#### **B** YBITS #1 Contract

Contractor: **MCM Construction, Inc.**

Approved Capital Outlay Budget: **\$144.0 M**

Status: **In Construction**



Overview of YBITS, YBID and Existing East Span

The YBITS #1 contract will construct the mainline roadway structures from the SAS bridge to the YBI tunnel. On December 15, 2009, Caltrans opened three bids for the Yerba Buena Island Transitions Structures (YBITS) #1 contract. On February 4, 2010, Caltrans awarded the YBITS #1 Contract to MCM Construction, Inc. Construction work will start when the YBID contractor has completed demolition of the old viaduct structure. MCM Construction, Inc. is also the firm constructing the Oakland Touchdown #1 contract.

**Status:** MCM Construction started work on submittals on March 10, 2010. Construction is scheduled to start on September 1, 2010.



Rendering of Overview of Future Yerba Buena Island Transition Structures (top) in Progress with Detour Viaduct (bottom) Completed



## YBITS #2 Contract

Contractor: TBD

Approved Current Capital Outlay Budget:  
\$59.0 M

Status: **In Design.**

The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island.

## YBITS Landscaping Contract

Contractor: TBD

Approved Capital Outlay Budget \$3.3M

Status: **In Design.**

Upon completion of the YBITS work, a follow-on landscaping contract will be executed to re-plant and landscape the area.

## Yerba Buena Island Transition Structures Advanced Work

Due to the re-advertisement of the SAS superstructure contract in 2005, it became necessary to temporarily suspend the detour contract and make design changes to the viaduct. To make more effective use of the extended contract duration and to reduce overall project schedule and construction risks, the TBPOC approved the advancement of foundation and column work from the Yerba Buena Island Transition Structures contract.

**Status:** Work continues on the columns for the Yerba Buena Island Transition Structures advanced work.



Yerba Buena Island Transition Structures Advanced Columns

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Self-Anchored Suspension (SAS) Bridge

If one single element bestows world class status on the new Bay Bridge East Span, it is the Self-Anchored Suspension (SAS) bridge. This engineering marvel will be the world's largest SAS span at 2,047 feet in length, as well as the first bridge of its kind built with a single tower.

The SAS was separated into three separate contracts— construction of the land-based foundations and columns at Pier W2; construction of the marine-based foundations and columns at Piers T1 and E2; and construction of the SAS steel superstructure, including the tower, roadway, and cabling. Construction of the foundations at Pier W2 and at Piers T1 and E2 was completed in 2004 and 2007, respectively.

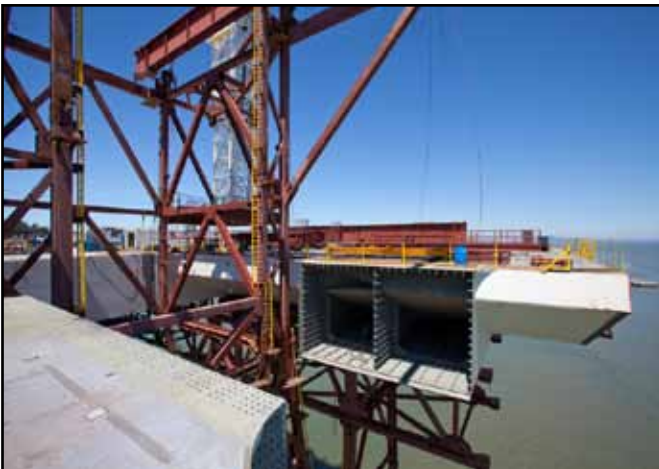
#### SAS Land Foundation Contract

Contractor: West Bay Builders, Inc.

Approved Capital Outlay Budget: \$26.4 M

Status: Completed October 2004

The twin W2 columns on Yerba Buena Island provide essential support for the western end of the SAS bridge, where the single main cable for the suspension span will extend down from the tower and wrap around and under the western end of the roadway deck. Each of these huge columns required massive amounts of concrete and steel and are anchored 80 feet into the island's solid bedrock.



SAS T1 Framing Tower Erection in Progress



SAS Overview of W2 Cap Beam

#### C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$280.9 M

Status: Completed January 2008

Construction of the piers at E2 and T1 required significant on-water resources to drive the foundation support piles down, not only to bedrock, but also through the bay water and mud (see rendering on facing page).

The T1 foundation piles extend 196 feet below the waterline and are anchored into bedrock with heavily reinforced concrete rock sockets that are drilled into the rock. Driven nearly 340 feet deep, the steel and concrete E2 foundation piles were driven 100 feet deeper than the deepest timber piles of the existing east span in order to get through the bay mud and reach solid bedrock.



## **D** SAS Superstructure Contract

Contractor: American Bridge/Fluor Enterprises, Joint Venture

Approved Capital Outlay Budget: \$1.75 B

Status: 53% Complete as of July 2010

The SAS bridge is not just another suspension bridge. Rising 525 feet above mean sea level and embedded in rock, the single-tower SAS span is designed to withstand a massive earthquake. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. These cables hold up the roadbed and are anchored to the east end of the box girders. While there will appear to be two main cables on the SAS, there will actually only be one. This single cable will be anchored within the eastern end of the roadway, carried over the tower and then wrapped around the two side-by-side decks at the western end.

The single-steel tower will be made up of four separate legs connected by shear link beams which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.

The next several pages highlight the construction sequence of the SAS and are followed by detailed updates on specific construction activities.



Architectural Rendering of New Self-Anchored Suspension Span and Skyway

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Construction Sequence*

#### STEP 1 - CONSTRUCT TEMPORARY SUPPORT STRUCTURES

Temporary support structures will need to be erected from the Skyway to Yerba Buena Island to support the new SAS bridge during construction.

**Status:** Foundations and the temporary support structures are substantially complete.



#### STEP 2 - INSTALL ROADWAYS

The roadway boxes are being lifted into place by using the shear-leg crane barge. The boxes are being bolted and welded together atop the temporary support trusses to form two continuous parallel steel roadway boxes.

**Status:** The second shipment of roadway boxes arrived on April 18, 2010. Six eastbound and westbound roadway boxes have been lifted into place and are being bolted and welded together. To date, five crossbeams have been erected between the roadway boxes.



#### STEP 3 - INSTALL TOWER

Each of the four legs of the tower will be erected in five separate lifts. The tower boxes will be installed using a temporary erection tower and lifting jacks.

**Status:** The first tower lift shipped on June 19, 2010 and is expected to arrive at Pier 7 in San Francisco in mid-July 2010.



#### STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable will be pulled from the east end of the SAS bridge, over the tower, and wrapped around Pier W2 and again back over the tower and to the west end of the SAS bridge deck. Suspenders cables will be added to lift the roadway decks off the temporary support structure.

**Status:** Cable installation is pending the erection of the tower and roadway spans. The first half of the cables arrived in January 2010. The second half shipped on June 18, 2010 and is expected to arrive at Pier 7 in San Francisco in mid-July 2010.



#### STEP 5 - WESTBOUND OPENING

The new bridge will first open in the westbound direction pending completion of the Yerba Buena Island Transition Structures.

**Status:** Westbound opening is forecast for fall 2013. The westbound approach from Oakland to the Skyway was completed by the Oakland Touchdown #1 contract in 2009.



#### STEP 6 - EASTBOUND OPENING

Opening of the bridge in the eastbound direction is pending completion of Oakland Touchdown #2. Westbound traffic will need to be routed off the existing bridge before the eastbound approach structure can be completed.

**Status:** The eastbound opening is forecast for December 2013.



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Fabrication Activities*

#### **Roadway and Tower Segments**

Like giant three-dimensional jigsaw puzzles, the roadway and tower boxes of the SAS bridge are hollow steel shells that are internally strengthened and stiffened by a highly engineered network of welded steel ribs and diaphragms. The use of steel in this manner allows for a flexible yet relatively light and strong structure able to withstand the massive loads placed on the bridge during seismic events.

On the critical path to completing the bridge are the fabrication of the last four roadway boxes (segments 13 and 14 east and west). Start of fabrication of these boxes has fallen behind schedule due to delays in the fabrication drawing preparation process. These delays will likely preclude the westbound opening of the bridge in 2012, but the push for the opening of the bridge to traffic in both directions in 2013 continues.

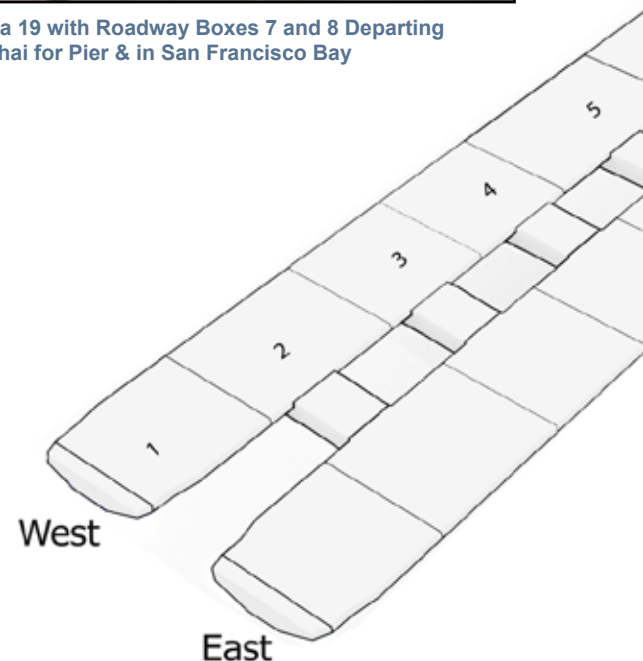
All components undergo a rigorous quality review by ZPMC, ABF, and Caltrans to ensure that only bridge components that have been built in accordance to contract specifications will be shipped.

**Roadway Box Fabrication Status:** As shown in the diagram to the right, roadway boxes 1 through 6 east and west have been completed and shipped to the Bay Area. Boxes 7 and 8 east and west were shipped on July 26th and roadway box 9 is in trial assembly or painting. The remaining boxes are still being pieced together into larger segments. Fabrication of sub-assemblies for box 13 has started.

**Tower Fabrication Status:** Each of the four legs of the towers is composed of five separate lifts. The lifts get progressively shorter and lighter as they progress up the tower. Currently, the first four lifts of tower boxes are in various stages of fabrications with lifts 1 and 2 furthest along. Tower boxes 1 and 2 have been trial-fit together to ensure alignment. The first tower boxes shipped on June 19, 2010 and are expected to arrive in San Francisco in mid-July 2010.

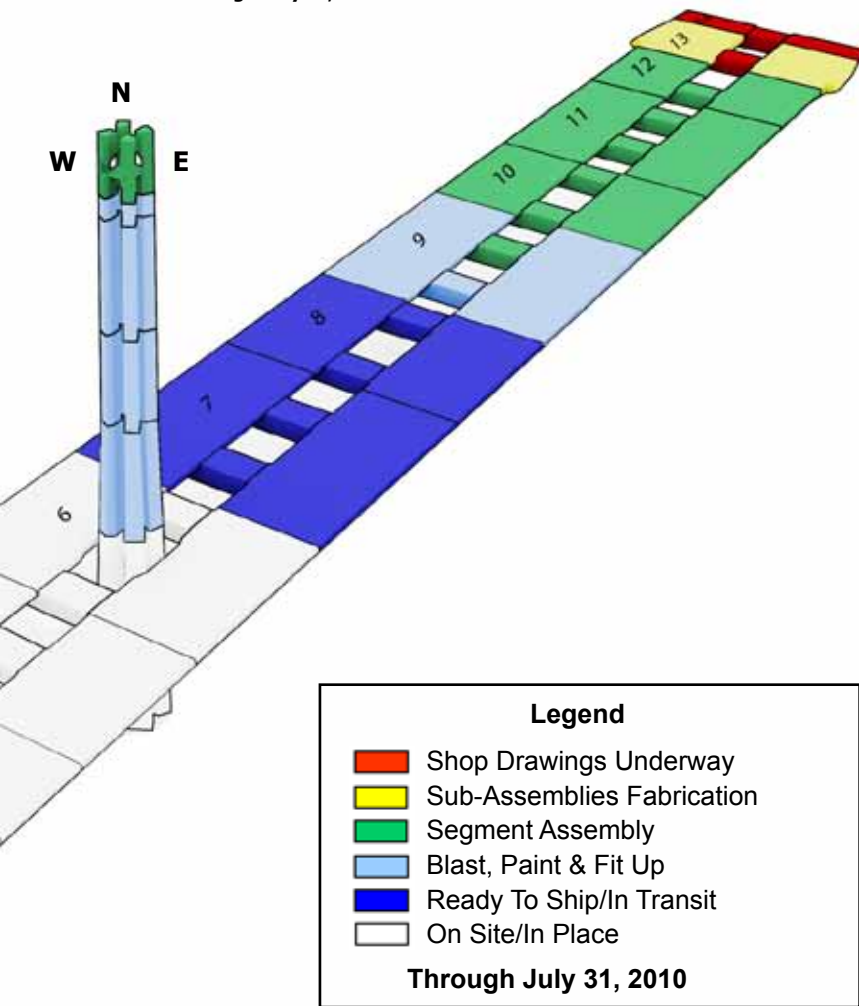


The Zhenhua 19 with Roadway Boxes 7 and 8 Departing from Shanghai for Pier & in San Francisco Bay



## Fabrication Progress Diagram

Through July 31, 2010



Roadway Boxes 7 and 8 Loaded onto Transport Ship



Roadway Boxes 7 and 8 Loaded onto Transport Ship



ZPMC Ship Yard

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### ***Self-Anchored Suspension (SAS) Superstructure Fabrication Activities (cont.)***

#### ***Cables and Suspenders***

One continuous main cable will be used to support the roadway deck of the SAS bridge. Anchored into the eastern end of the bridge, the main cable will be anchored with the roadway box at the east end of the SAS near Pier E1, extend over the main tower at T1, loop around the western end of the roadway decks at Pier W2, and then travel back over the main tower to the western end of the box girder. The main cable will be made up of bundles of individual wire strands. Supporting the roadway decks to the main cable will be a number of smaller suspender cables. The main cable will be fabricated in China and the suspender cables in Missouri, USA.

**Status:** The first half of the cable shipment arrived in at Pier 7 in San Francisco in January 2010 and the second half is expected in July 2010.



SAS Completed Suspender Assemblies

#### ***Saddles, Bearings, Hinges, and Other Bridge Components***

The mounts on which the main cable and suspender ropes will sit are made from solid steel castings. Castings for the main cable saddles are being made by Japan Steel Works, while the cable bands and brackets are being made by Goodwin Steel in the United Kingdom.

The bridge bearings and hinges that support, connect, and transfer loads from the self-anchored suspension (SAS) span to the adjoining sections of the new east span are being fabricated in a number of locations. Work on the bearings is being performed in Pennsylvania, USA and Hochang, South Korea, while hinge pipe beams are being fabricated in Oregon, USA.

**Status:** The cable saddles and hinges at the W2 cap beam and YBITS are under fabrication. The west deviation saddles arrived at Pier 7 in San Francisco on April 15, 2010. All other saddles are completed and have been shipped to the job site.



SAS Hinge K Pipe Beams Spare Fuse

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Field Activities*



Shear-Leg Barge Crane

#### **Shear-Leg Barge Crane**

The massive shear-leg barge crane that is helping to build the SAS superstructure arrived in the San Francisco Bay on March 12, 2009 after a trans-Pacific voyage.

The crane and barge are separate units operating as a single entity named the “Left Coast Lifter.” The 400-by-100-foot barge is a U.S. flagged vessel that was custom built in Portland, Oregon by U.S. Barge, LLC and outfitted with the crane by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC) at a facility near Shanghai, China. The crane’s boom weighs 992 tons and is 328 feet long. The crane can lift up to 1,873 tons, including the deck and tower boxes for the SAS.

**Status:** The shear-leg barge crane arrived at the job site March 2009. The crane has off-loaded and placed all temporary support structures and SAS roadway boxes and crossbeams.



Temporary Structures Supporting Eastbound and Westbound Roadway Boxes and Crossbeams

#### **Temporary Support Structures**

To erect the roadway decks and tower of the bridge, temporary support structures were first put in place. Almost a bridge in itself, the temporary support structures stretch from the end of the completed Skyway back to Yerba Buena Island. For the tower, a strand jack system is being built into the tower’s temporary frame to elevate the upper sections of the tower into place. These temporary supports are being fabricated in the Bay Area, as well as in Oregon and in China at ZPMC.

**Status:** The temporary support structures are substantially complete. A mid section of the westbound truss has been left out for installation of roadway boxes 7 and 8.



SAS E2 Cap Beam and the end of the Skyway

#### **Cap Beams**

Construction of the massive steel-reinforced concrete cap beams that link the columns at piers W2 and E2 was left to the SAS superstructure contractor and represents the only concrete portions of work on that contract. The east and west ends of the SAS roadway will rest on the cap beams and the main cable will wrap around Pier W2, while anchoring into the east end of the SAS deck sections near E2.

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### *Self-Anchored Suspension (SAS) Superstructure Installation Activities*

Upon arrival in Oakland, the steel roadway and tower sections are off-loaded directly from the transport ship onto barges to await installation atop the temporary support structures. Steel roadway boxes will be installed from west to east. Due to the shallow waters near Yerba Buena Island, the eastbound lanes on the south side of the new bridge will be installed first, then to be followed by the westbound lanes. In total, there are 28 roadway boxes (14 in each direction) that range from 560 to 1660 tons and from 80 to 230 feet long.

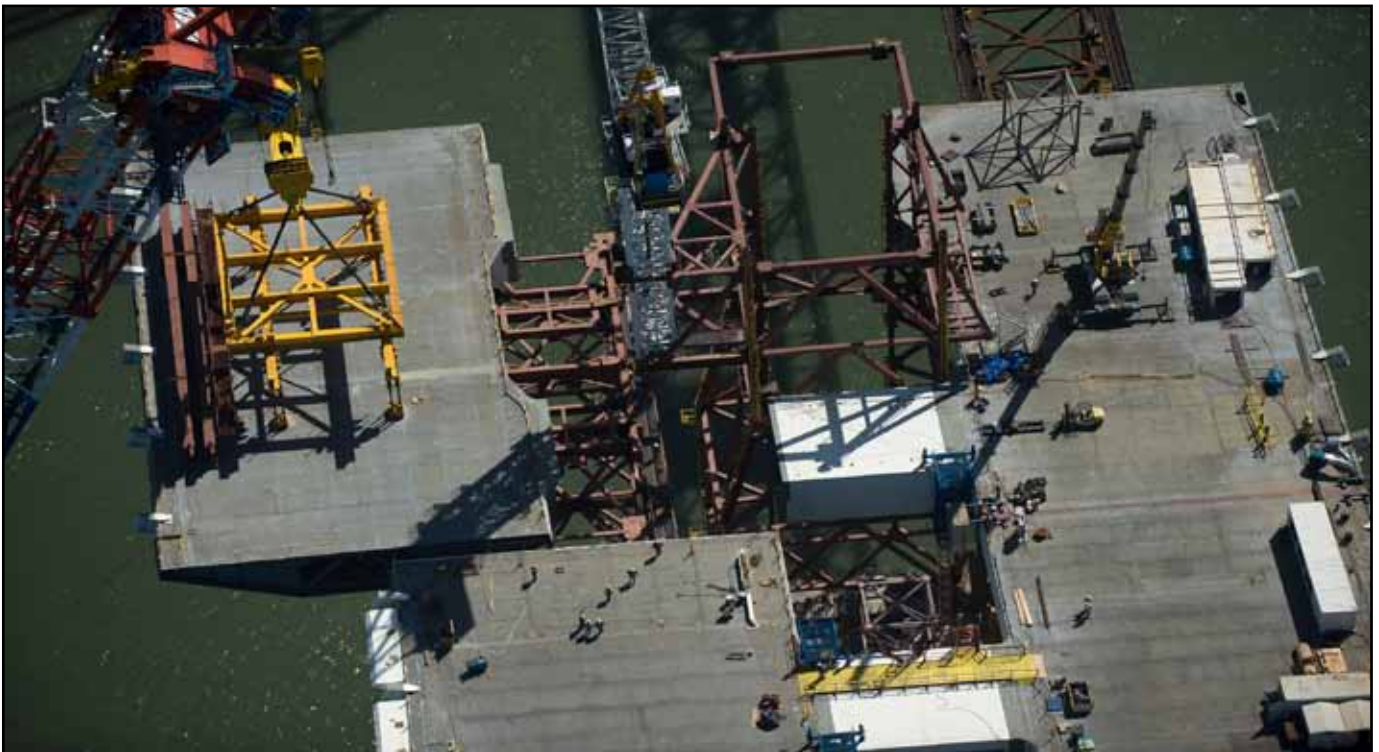
The tower comprises four legs, each made up of four tower lifts that make up the majority of the height of the tower, the tower grillage, and finally the tower head.

**Status:** The first four east and four west roadway boxes arrived in the Bay Area in late January 2010. All have been lifted into place and are now being welded together. Four additional roadway boxes arrived on April 18, 2010 and all four were lifted into place and are being welded together to form a continuous roadway.





SAS Shearleg Crane Placing Westbound Roadway Box 6 on the Temporary Support Structures



SAS Moving Westbound Roadway Box 6 into position on the Temporary Structures

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Skyway

The Skyway, which comprises much of the new East Span, will drastically change the appearance of the Bay Bridge. Replacing the gray steel that currently cages drivers, a graceful, elevated roadway supported by piers will provide sweeping views of the bay.

#### **E Skyway Contract**

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$1.25 B

Status: Completed March 2008

Extending for more than a mile across Oakland mudflats, the Skyway is the longest section of the East Span. It sits between the new Self-Anchored Suspension (SAS) span and the Oakland Touchdown. In addition to incorporating the latest seismic-safety technology, the side-by-side roadway decks of the Skyway feature shoulders and lane widths built to modern standards.

The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), containing approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest segments of their kind ever cast and were lifted into place by custom-made winches.

The Skyway marine foundation consists of 160 hollow steel pipe piles measuring eight feet in diameter and dispersed among 14 sets of piers. The 365-ton piles were driven more than 300 feet into the deep bay mud. The new East Span piles were battered or driven in at an angle, rather than vertically, to obtain maximum strength and resistance.

Designed specifically to move during a major earthquake, the Skyway features several state-of-the-art seismic safety innovations, including 60-foot-long hinge pipe beams. These beams will allow deck segments on the Skyway to move, enabling the deck to withstand greater motion and to absorb more earthquake energy.



Overview of the Skyway and the Temporary Support Structures with the Shear-Leg Barge Crane Lifting Roadway Boxes or Orthotropic Box Girders (OBG) into Place



## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Oakland Touchdown

When completed, the Oakland Touchdown (OTD) structures will connect Interstate 80 in Oakland to the new side-by-side decks of the new East Span. For westbound drivers, the OTD will be their introduction to the graceful new East Span. For eastbound drivers from San Francisco, this section of the bridge will carry them from the Skyway to the East Bay, offering unobstructed views of the Oakland hills.

The OTD will be constructed through two contracts. The first contract will build the new westbound lanes, as well as part of the eastbound lanes. The second contract to complete the eastbound lanes cannot fully begin until westbound traffic is shifted onto the new bridge. This enables a portion of the upper deck of the existing bridge to be demolished allowing for a smooth transition for the new eastbound lanes in Oakland.

#### **F** Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.  
Approved Capital Outlay Budget: \$212.0 M  
Status: Completed June 2010

The OTD #1 contract constructs the entire 1,000-foot-long westbound approach from the toll plaza to the Skyway. When completed, the westbound approach structure will provide direct access to the westbound Skyway. In the eastbound direction, the contract will construct a portion of the eastbound structure and all of the eastbound foundations that are not in conflict with the existing bridge.

**Status:** MCM Construction, Inc. completed OTD #1 westbound and eastbound phase 1 on June 8, 2010.

#### **G** Oakland Touchdown #2 Contract

Contractor: TBD  
Approved Capital Outlay Budget: \$62.0 M  
Status: In Design

The OTD #2 contract will complete the eastbound approach structure from the end of the Skyway to Oakland. This work is critical to the eastbound opening of the new bridge, but cannot be completed until westbound traffic has been shifted off the existing upper deck to the new SAS bridge.



Overview of Oakland Touchdown #1 Project Status Looking West

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### San Francisco-Oakland Bay Bridge East Span Replacement Project Other Contracts

A number of contracts needed to relocate utilities, clear areas of archeological artifacts, and prepare areas for future work have already been completed. The last major contract will be the eventual demolition and removal of the existing bridge, which by that time will have served the Bay Area for nearly 80 years. Following is a status of some the other East Span contracts.



Archeological Investigations

### East Span Interim Seismic Retrofit

Contractors: 1) California Engineering  
2) Balfour Beatty

Approved Capital Outlay Budget: \$30.8 M

Status: Completed October 2000

After the 1989 Loma Prieta Earthquake, and before the final retrofit strategy was determined for the East Span, Caltrans completed an interim retrofit of the existing bridge to prevent a catastrophic collapse of the bridge should a similar earthquake occur before the East Span was completely replaced. The interim retrofit was performed under two separate contracts that lengthened pier seats, added some structural members, and strengthened areas of the bridge so they would be more resilient during an earthquake.



Existing East Span of the San Francisco-Oakland Bay Bridge

### Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.

Approved Capital Outlay Budget: \$18.3 M

Status: Completed December 2008

The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of stormwater runoff. Focused on the areas around and approaching the toll plaza, the contract added new drainage and built new bio-retention swales and other related constructs.



Stormwater Retention Basin



## Yerba Buena Island Substation

Contractor: West Bay Builders

Approved Capital Outlay Budget: \$11.6 M

Status: Completed May 2005

This contract relocated an electrical substation just east of the Yerba Buena Island Tunnel in preparation for the new East Span.

## Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture

Approved Capital Outlay Budget: \$9.2 M

Status: Completed December 2000

While large-diameter battered piles are common in offshore drilling, the new East Span is one of the first bridges to use them in its foundations. To minimize project risks and build industry knowledge, a pile installation demonstration project was initiated to prove the efficacy of the proposed technology and methodology. The demonstration was highly successful and helped result in zero contract change orders or claims for pile driving on the project.

## H Existing Bridge Demolition

Contractor: TBD

Approved Capital Outlay Budget: \$239.1 M

Status: In Design

Design work on the contract will start in earnest as the opening of the new bridge to traffic approaches.



New YBI Electrical Substation

## I Electrical Cable Relocation

Contractor: Manson Construction

Approved Capital Outlay Budget: \$9.6 M

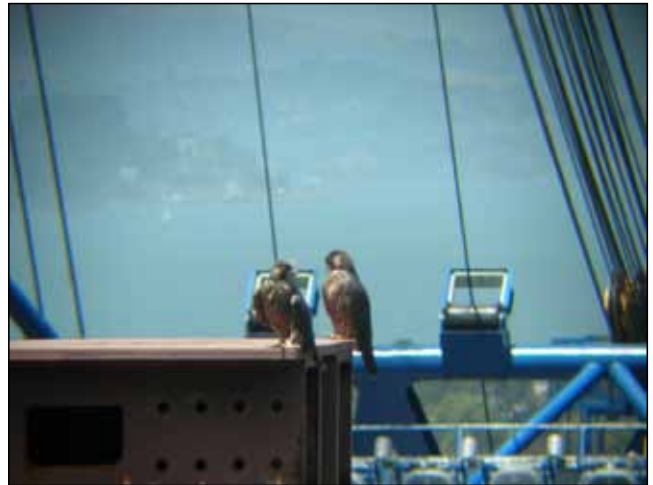
Status: Completed January 2008

A submerged cable from Oakland that is close to where the new bridge will touch down supplies electrical power to Treasure Island. To avoid any possible damage to the cable during construction, two new replacement cables were run from Oakland to Treasure Island. The extra cable was funded by the Treasure Island Development Authority.

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Quarterly Environmental Compliance Highlights

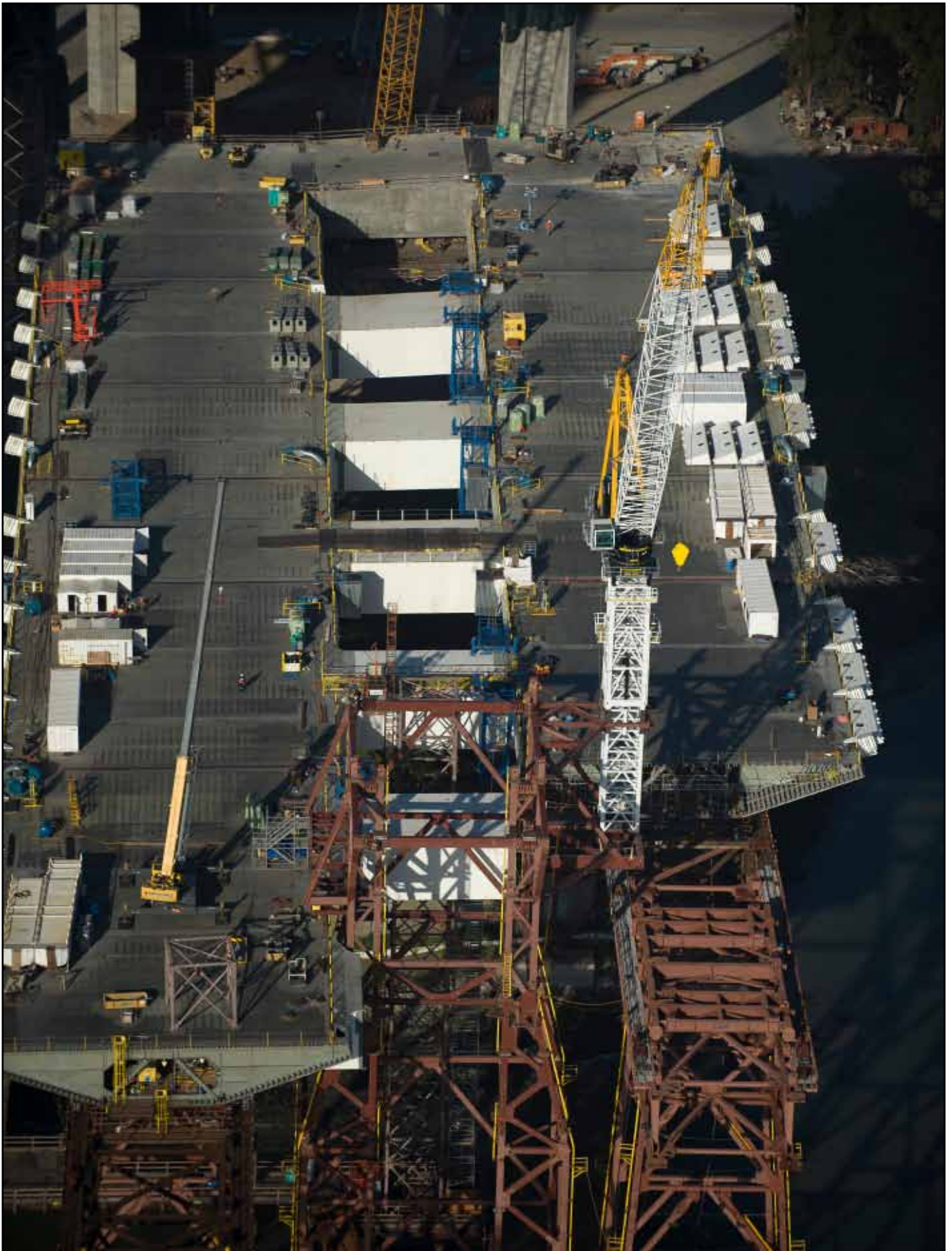
- Overall environmental compliance for the SFOBB East Span project has been a success. All weekly, monthly and annual compliance reports to resource agencies have been delivered on time. There are no comments from receiving agencies. The tasks for the current quarters are focused on mitigation monitoring. Key successes in this quarter are as follows:
- Peregrine falcon monitoring for the 2009/2010 nesting season continued through the quarter. Three nestlings hatched at the nest site on the north leg of Pier E2 of the existing bridge during the last two weeks of April and first week of May. The three nestlings were banded with visual identification bands (VIB) on May 18, 2010. The juvenile birds were named Paul, Sam and Rita, based on the letters on their VIB, respectively 65/P, 78/S and 16/R. All three juvenile peregrine falcons from the E2 nest site on the existing bridge successfully fledged the nest during the first and second weeks of June. The birds were observed flying well and roosting on structures throughout the SAS project site on YBI. All birds appeared healthy and undisturbed by construction activities.
- Weekly Monitoring of Canada geese along the I-80 roadway adjacent to the Emeryville Crescent for the year began on March 4, 2010 and will continue through August 2010.
- San Francisco-Oakland Bay Bridge (SFOBB) environmental compliance and storm water pollution prevention plan (SWPPP) inspections were conducted weekly at all active project sites. The project team continues to work closely with contractors to ensure compliance with environmental permits and regulations and improve SWPPP and best management practices.
- District 4 was the proud recipient of the 2010 California Transportation Foundation Award (Tranny Award) Environmental Enhancement Project of the Year for our Skaggs Island Restoration Project as part of the mitigation for the San Francisco-Oakland Bay Bridge East Span Seismic Safety Project. This project was primarily funded by Caltrans, which provided approximately \$9 million. The project funded demolition of the United States Navy (US Navy) Naval Security Group Activity facility at Skaggs Island and removal of associated contaminants. Demolition activities are underway, and upon completion these lands will be transferred from the US Navy to the United States Fish and Wildlife Service (USFWS) to be restored to tidal marsh as part of the San Pablo Bay National Wildlife Refuge, which will increase the refuge's current 13,190 acres of protected lands by 25 percent.
- On June 22, 2010 Caltrans performed a shoreline clean-up at the Emeryville Crescent Marsh, adjacent to westbound Interstate-80. Two truck loads of tires, styrofoam, plastic and other debris was removed from the shoreline.
- On June 23, 2010 Caltrans submitted the Final Marine Mammal Monitoring Report for the Self-Anchored Suspension Span Temporary Towers to the National Oceanic and Atmospheric Administration, National Marine Fisheries Service.



Peregrine Falcons Undisturbed by Construction Activities



Emeryville Crescent Clean-Up



Aerial View of Installed Roadway Boxes

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Antioch Bridge Seismic Retrofit Project

Contractor: California Engineering Contractors, Inc.

Approved Capital Outlay Budget: \$70.0 M

Status: In Construction

Serving the Delta region of the Bay Area, the Antioch Bridge takes State Route 160 traffic over the San Joaquin River, linking eastern Contra Costa County with Sacramento County. The current 1.8-mile-long steel plate girder bridge was opened in 1978 with one lane in each direction. The current retrofit strategy for the bridge includes relatively minor modifications to the approach structure on Sherman Island, the addition of isolation bearings and strengthening of the columns and hinge retrofits.



Antioch Bridge

**Status:** The first working day of the project was July 13, 2010 and the contractor has completed building trestle #2 adjacent to State Route 160 and will begin with trestle #1 by July 27th. Work will begin with the temporary roadway #2 at Sherman Island between piers 22 and 38 this week..

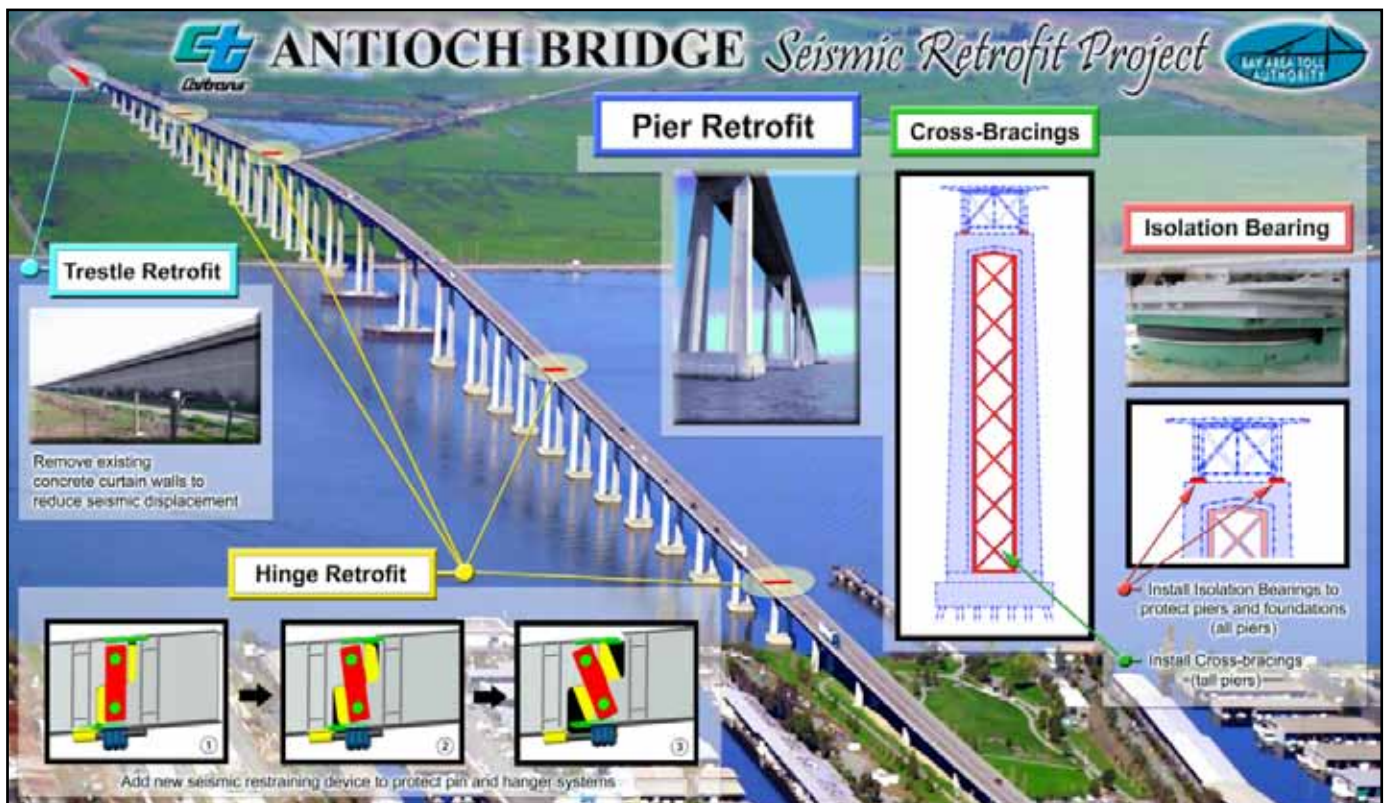


Diagram of Proposed Retrofit Work on the Antioch Bridge

## Dumbarton Bridge Seismic Retrofit Project

Contractor: TBD

Approved Capital Outlay Budget: \$270.0 M

Status: Advertised

The current Dumbarton Bridge was opened to traffic in 1982 linking the cities of Newark in Alameda County and East Palo Alto in San Mateo County. The 1.6-mile long bridge has six lanes (three in each direction) and an eight-foot bicycle/pedestrian pathway. The bridge is a combination of reinforced concrete and steel girders that support a reinforced lightweight concrete roadway on reinforced concrete columns. The current retrofit strategy for the bridge includes superstructure and deck modifications and installation of isolation bearings.



Dumbarton Bridge

**Status:** Bids for the Dumbarton Bridge Seismic Retrofit were opened on June 15, 2010. The lowest bids were substantially lower than the engineer's estimate. Caltrans is in the process of evaluating the bids to determine the lowest responsive bidder.

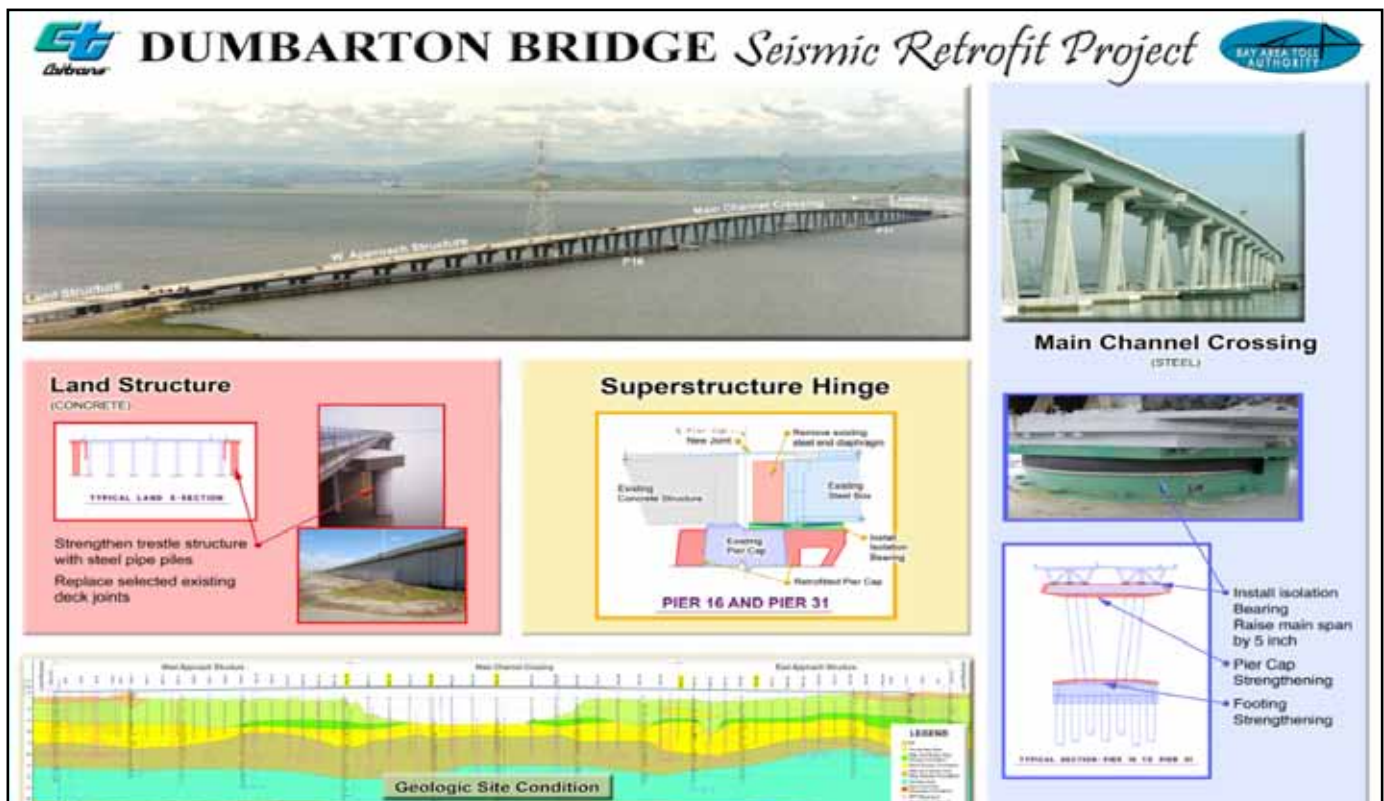


Diagram of Proposed Retrofit Work on the Dumbarton Bridge

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Other Completed Projects

In the 1990s, the State Legislature identified seven of the nine state-owned toll bridges for seismic retrofit. In addition to the San Francisco-Oakland Bay Bridge, these included the Benicia-Martinez, Carquinez, Richmond-San Rafael and San Mateo-Hayward bridges in the Bay Area, and the Vincent Thomas and Coronado bridges in Southern California. Other than the East Span of the Bay Bridge, the retrofits of all of the bridges have been completed as planned.

#### San Mateo-Hayward Bridge Seismic Retrofit Project

**Project Status: Completed 2000**

The San Mateo-Hayward Bridge seismic retrofit project focused on strengthening the high-rise portion of the span. The foundations of the bridge were significantly upgraded with additional piles.



High-Rise Section of San Mateo-Hayward Bridge

#### 1958 Carquinez Bridge Seismic Retrofit Project

**Project Status: Completed 2002**

The eastbound 1958 Carquinez Bridge was retrofitted in 2002 with additional reinforcement of the cantilever thru-truss structure.

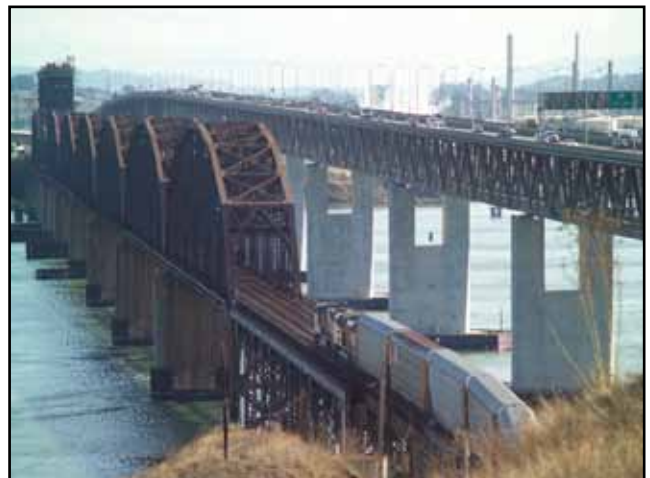


1958 Carquinez Bridge (foreground) with the 1927 Span (middle) under Demolition and the New Alfred Zampa Memorial Bridge (background)

#### 1962 Benicia-Martinez Bridge Seismic Retrofit Project

**Project Status: Completed 2003**

The southbound 1962 Benicia-Martinez Bridge was retrofitted to "Lifeline" status with the strengthening of the foundations and columns and the addition of seismic bearings that allow the bridge to move during a major seismic event. The Lifeline status means the bridge is designed to sustain minor to moderate damage after an event and to reopen quickly to emergency response traffic.



1962 Benicia-Martinez Bridge (right)

## Richmond-San Rafael Bridge Seismic Retrofit Project

**Project Status: Completed 2005**

The Richmond-San Rafael Bridge was retrofitted to a “No Collapse” classification to avoid catastrophic failure during a major seismic event. The foundations, columns, and truss of the bridge were strengthened, and the entire low-rise approach viaduct from Marin County was replaced.



Richmond-San Rafael Bridge

## Los Angeles-Vincent Thomas Bridge Seismic Retrofit Project

**Project Status: Completed 2000**

The Vincent Thomas Bridge is a 1,500-foot long suspension bridge crossing the Los Angeles Harbor in Los Angeles that links San Pedro with Terminal Island. The bridge was one of two state-owned toll bridges in Southern California (the other being the San Diego-Coronado Bridge). Opened in 1963, the bridge was seismically retrofitted as part of the TBSRP in 2000.



Los Angeles-Vincent Thomas Bridge

## San Diego-Coronado Bridge Seismic Retrofit Project

**Project Status: Completed 2002**

The San Diego-Coronado Bridge crosses over San Diego Bay and links the cities of San Diego and Coronado. Opened in 1969, the 2.1-mile long bridge was seismically retrofitted as part of the Toll Bridge Seismic Retrofit Project in 2002.



San Diego-Coronado Bridge

## TOLL BRIDGE SEISMIC RETROFIT PROGRAM

### Risk Management Program Update

#### POTENTIAL DRAW ON PROGRAM RESERVE (PROGRAM CONTINGENCY)

Assembly Bill (AB) 144 provides that Caltrans “regularly reassess its reserves for potential claims and unknown risks, incorporating information related to risks identified and quantified through its risk assessment processes.”

AB 144 set a \$900 million Program Reserve (also referred to as the Program Contingency). On October 11, 2009, Governor Schwarzenegger approved Assembly Bill No. 1175 that added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program and this resulted in changes to Program Contingency. The Program Contingency is currently \$708 million according to the TBPOC Approved Budget.

Caltrans’ approved TBSRP Risk Management Plan provides for the determination of the estimated potential draw on Program Contingency each quarter based on the total of all risks and the contingencies remaining from the contracts. Each contract in design has an assigned contingency allowance. A contract in

construction has a remaining contingency, which is the difference between its budget and the sum of bid items, state-furnished materials, contract change orders and remaining supplemental work. Capital outlay support has no identified contingency allowance. The total of the contingencies is the amount that is available to cover the risks of all contracts, program-level risks (the risks not assigned to a particular contract), and capital outlay support risks. The amount by which the sum of all risks exceeds the total of all contingencies represents a potential draw on the Program Contingency (i.e., Reserve).

Caltrans’ approved TBSRP Risk Management Plan provides for the determination of the estimated potential draw on program contingency each quarter, and compares it to the current balance in the Program Contingency. The 2010 second quarter of 2010 potential draw curve, excluding any potential out-of-scope program risks, is shown in Figure 1.

As of the end of the second quarter of 2010, the 50 percent probable draw on Program Contingency is \$405 million. The potential draw ranges from about \$250 million to \$550 million. Program Contingency decreased by \$240 million in the second quarter of 2010. \$137 million was returned to BATA and \$203 million was used

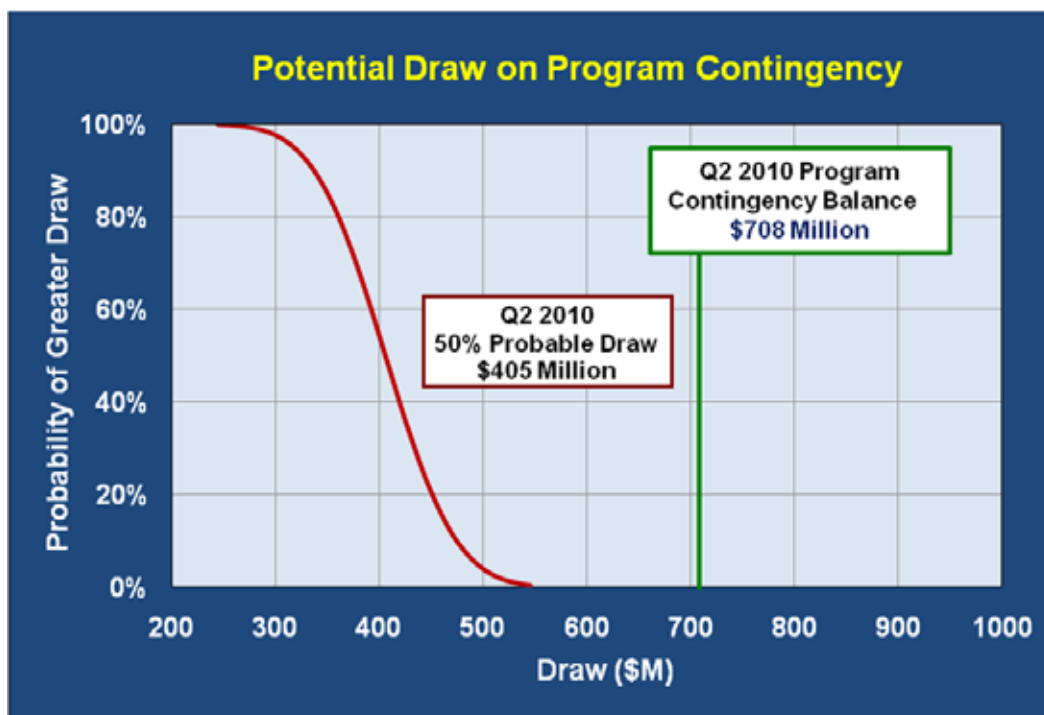


FIGURE 1 – POTENTIAL DRAW ON PROGRAM CONTINGENCY

**Note:** The Program Contingency funds could be used for other beneficial purposes than to cover risks. The potential draw chart should not be construed as a forecast of the future balance of Program Contingency funds.

to increase the COS budget of the East Span. \$100 million was recovered by reducing the Antioch budget by \$86 million and reducing other budgets by a total of \$14 million.

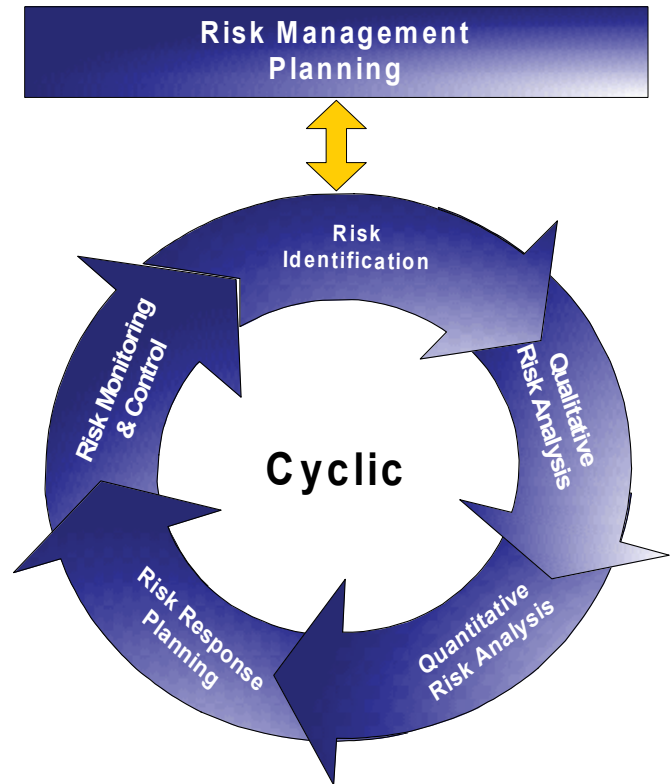
The current Program Contingency balance is sufficient to cover the cost of currently identified risks. Risk mitigation actions are continuously developed and implemented to reduce the potential draw on the Program Contingency.

## RISK MANAGEMENT DEVELOPMENTS

The TBPOC and Caltrans, in cooperation with the SAS and other SFOBB corridor contract contractors, continue to implement an aggressive plan to mitigate SAS contract and SFOBB corridor schedule risk in order to achieve the TBPOC's goal of achieving seismic safety in 2013.

Earlier TBPOC-approved incentive and disincentive provisions are proving successful in expediting approved working drawings delivery, as well as expediting the OBG and Tower steel delivery. Working drawings for the east end OBG Lifts 12 through 14 are progressing well, but remain a critical operation for the project. The incentives and the assignment of key personnel by Caltrans to this work have facilitated getting this challenging issue under control.

While there continues to be pressures to the SAS contract construction schedule as a result of Orthotropic Box Girder (OBG) east end complexities and other issues, many actions have and continue to be implemented in order to mitigate SAS contract and SFOBB corridor schedule risk. Such SAS Contract and SFOBB corridor schedule mitigating actions include many technical and administrative enhancements. For example: 1) Additional fabrication jigs have been procured to allow more elements to be fabricated concurrently, 2) Joint team member collocation at the fabrication facility has been implemented to facilitate quick resolution of constructability and design issues, 3) Welder training has been conducted at the fabrication facility, 4) Additional shop space has been procured at the fabrication facility, 5) Additional ships have been procured, 6) Welding process enhancements, including changes in welding wire material, have been assessed and implemented, 7) Additional fabricator shop drawing and fabrication resources have been procured, 8) Early installation of the catwalk and tramway is being planned, 8) Early Crossbeam 19 installation is being planned, 9) Barrier installation prior to load transfer is being planned, 10) Increased number of load transfer jacking points is being planned, 11) Re-sequencing of the YBITS 1 Contractor's operations at W2 is being implemented, 12)



Allowing seismic safety opening with minimum essential systems in place is being planned, and 13) Shortening eastbound/westbound opening transition is being assessed. Moreover, Team China continues to work on mitigating deck and tower fabrication challenges reported in the SAS Contractor's latest schedule update. The Corridor Schedule Team (CST) continues to assess the SAS and other contract schedules. The CST developed an intermediate-level critical path method schedule for the corridor to evaluate schedule risks. This corridor schedule is a summarization of the contract schedules submitted by the various contractors, and schedules developed by Caltrans for the contracts in design. The CST and the Risk Management Team jointly identified opportunities to mitigate the overall SAS contract schedule impacts due to the complexities in producing shop drawings and fabricating the East End. Most of the opportunities are during field construction and include re-sequencing concurrent work and redefining SAS Phase completion requirements. The project teams are working to mitigate portions of the potential schedule delays by implementing the mitigation measures outlined above. The teams are also continuing to identify additional schedule mitigation opportunities and concepts. Implementing these measures will have direct cost impacts. The Risk Management Team has included items in the SAS contract and program-level risk

## **TOLL BRIDGE SEISMIC RETROFIT PROGRAM**

### **Risk Management Program Update**

registers that could be applied toward the potential costs of risk mitigation and recovering the SAS schedule.

The TBPOC and Caltrans are assessing incentive and disincentive provisions for the SAS Contractor to accelerate the delivery of the east end OBGs to achieve the TBPOC's goal of achieving seismic safety in 2013. Discussions focus on three key areas: streamlining East End fabrication, accelerating cable erection through load transfer and opening the bridge to traffic before all contracted work is completed.

The YBITS 1 Contractor's completion of Hinge K is on the critical path to westbound opening. When load transfer is completed, the SAS Contractor removes the temporary works at W2 and clears the area for the YBITS 1 Contractor to complete the westbound frame 2 and the Hinge K closure. A plan is being implemented to allow the YBITS 1 Contractor to complete Frame 2 prior to SAS load transfer, thus reducing the time required for the YBITS 1 Contractor to be ready for westbound traffic.

### **RISK MANAGEMENT LOOK AHEAD**

The TBPOC and Caltrans, in cooperation with the SAS Contractor, will continue to assess implementation of incentive and disincentive provisions to expedite project completion and achieve the TBPOC's goal of opening the bridge in 2013. The SAS Contractor is working with Caltrans to identify ways of re-arranging the roadway boxes and tower lifts among the shipments, and possibly adding two shipments to deliver the bridge components to the jobsite sooner. Assessments have concentrated on three key areas: streamlining East End fabrication, accelerating cable erection through load transfer, and redefining requirements for placing traffic on the bridge. The Cable Engineering Risk Management (CERM) team continued to engage international experts to help resolve the complex cable engineering and geometry issues. The CERM team has recommended several modifications that have resolved potential spatial conflicts and issues related to cable rotation during installation of the cable bands and suspenders. The TBPOC and Caltrans, in cooperation with the SAS contractor, will continue to assess implementation of incentive and disincentive provisions to expedite project completion and recover schedule delays. Such a schedule can be used as a planning tool to identify risks and their potential impacts to bridge opening. Caltrans is working with the contractor to identify ways of rearranging the roadway boxes and tower lifts among shipments to help mitigate project delays.







Richmond-San Rafael Bridge

## REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM

## REGIONAL MEASURE 1 PROGRAM

### Interstate 880/State Route 92 Interchange Reconstruction Project

**Project Status: In Construction**

The Interstate 880/State Route 92 Interchange Reconstruction Project is the final project under the Regional Measure 1 Toll Bridge Program. Project completion fulfills a promise made to Bay Area voters in 1988 to deliver a slate of projects that help expand bridge capacity and improve safety on the bridges.

This corridor is consistently one of the Bay Area's most congested during the evening commute. This is due in part to the lane merging and weaving that is required by the existing cloverleaf interchange. The new interchange will feature direct freeway-to-freeway connector ramps that will increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct-connector ramps, drivers coming off the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880 (see progress photos on pages 74 and 75).

### Interstate 880/State Route 92 Interchange Reconstruction Contract

Contractor: Flatiron/Granite

Approved Capital Outlay Budget: \$158.0 M

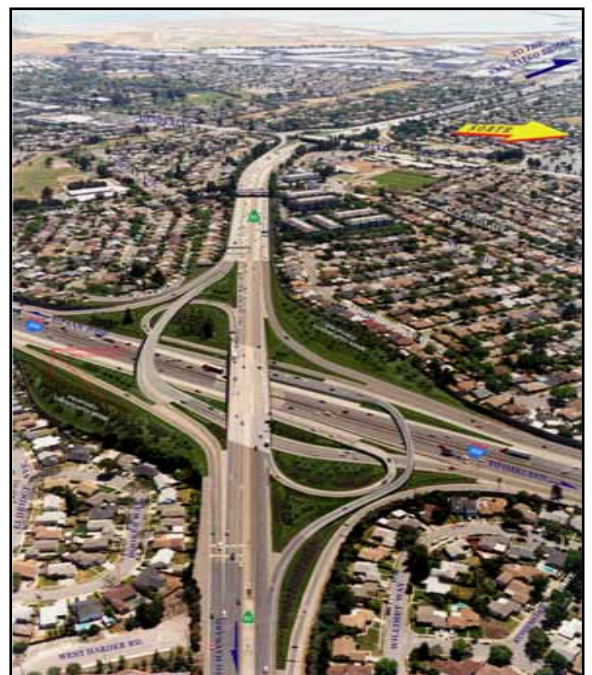
Status: % Complete as of July 2010



Overview of Progress of 92/880



92/880 Calaroga Bridge Top Deck Rebar Placed



Future Interstate 880/State Route 92 Interchange (as simulated) Looking West toward San Mateo

## Stage 1 – Construct East Route 92 to North Interstate 880 Connector

The new east Route 92 to north Interstate 880 connector (ENCONN) is the most critical fly over structure for relieving congestion in the corridor. The ENCONN will be first used as a detour to allow for future stages of work, while keeping traffic flowing.

**Status:** ENCONN was completed and opened to detour traffic on May 16, 2009.

## Stage 2 – Replace South Side of Route 92 Separation Structure

By detouring eastbound Route 92 traffic onto ENCONN, the existing separation structure that carries SR92 over I-880 can be replaced. The existing structure will be cut lengthwise, and then demolished and replaced separately. In this stage, the south side of the structure will be replaced, while west Route 92 and south-Interstate-880-to-east-Route-92 traffic will stay on the remaining structure.

**Status:** Work on the south side of the separation structure is complete.

## Stage 3 – Replace North Side of Route 92 Separation Structure

Upon completion of Stage 2, the existing north side of the separation structure will be demolished and replaced. Its traffic will then be shifted onto the newly reconstructed south side.

**Status:** The demolition of the existing westbound separation structure (north side) was completed on May 5, 2010. **The north side structure is forecast to be complete in March of 2011.**

## Stage 4 – Final Realignment and Other Work

Upon completion of the Route 92 separation structure, east Route 92 traffic can be shifted onto its permanent alignment from the new ENCONN and directly under the new separation structure. Along with the ENCONN and Route 92 separation structures, several soundwalls, a pedestrian overcrossing on I-880 at Eldridge Avenue and other ramps and structures will also be reconstructed as part of this project. Work will begin at the North to West Connector Bridge (NWCONN).

**Status:** The NWCONN structure is approximately 50 percent complete.

As part of this construction sequence, the retaining wall D1 / D2 is key to completion of this work. This traffic movement will allow for reducing congestion moving on I-880 North to SR-92 Westbound. The final structure to be completed moves traffic from eastbound SR-92 to southbound I-880. This structure is the West to South Connector Bridge (WSCONN).

**Status:** The WSCONN structure is approximately 30 percent complete.

**Status:** Work is completed on retaining wall A in the northwest quadrant. The new Eldridge Avenue pedestrian overcrossing will be opened by August 6, 2010 and is currently 85 percent complete. The new pump station construction is ongoing and scheduled to be completed in August 2010. The westbound SR-92 separation structure commenced construction in April 2010. The demolition of the existing structure is complete and the start of construction for the new separation structure has started.

The Calaroga Bridge temporary bridge was completed January 15, 2010. The Calaroga left bridge is approximately 75 percent complete and is forecast to complete in August 2010. Upon completion of the left bridge the right bridge will be constructed and is forecast to be complete the first quarter of 2011. NWCONN is currently forecast to be completed by the end of 2010.



Stage 1 - Construct East Route 92 to North Interstate 880 Direct Connector



Stage 2 - Demolish and Replace South Side of Route 92 Separation Structure



Stage 3 - Demolish and Replace North Side of Route 92 Separation Structure



Stage 4 - Final Realignment and Other Work

## REGIONAL MEASURE 1 PROGRAM

### Other Completed Projects

#### San Mateo-Hayward Bridge-Widening Project

**Project Status: Completed 2003**

This project expanded the low-rise concrete trestle section of the San Mateo-Hayward Bridge to allow for three lanes in each direction to match the existing configuration of the high-rise steel section of the bridge.



Widening of the San Mateo-Hayward Bridge Trestle on Left

#### Richmond-San Rafael Bridge Rehabilitation Projects

**Project Status: Completed 2006**

Two major rehabilitation projects for the Richmond-San Rafael Bridge were funded and completed: (1) replacement of the western concrete approach trestle and ship-collision protection fender system; and (2) rehabilitation of deck joints and resurfacing of the bridge deck.

In 2005, along with the seismic retrofit of the bridge, the trestle and fender replacement work was completed as part of the same project. Under a separate contract in 2006, the bridge was resurfaced with a polyester concrete overlay along with the repair of numerous deck joints.



New Richmond-San Rafael Bridge West Approach Trestle under Construction

#### Richmond Parkway Construction Project

**Project Status: Completed 2001**

The final connections to the Richmond Parkway from Interstate 580 near the Richmond-San Rafael Bridge were completed in May 2001.

## New Alfred Zampa Memorial (Carquinez) Bridge Project

**Project Status: Completed 2003**



New Alfred Zampa Memorial (Carquinez) Bridge Soon after Opening to Traffic, with Crockett Interchange Still under Construction

The new western span of the Carquinez Bridge, which replaced the original 1927 span, is a twin-towered suspension bridge with three mixed-flow lanes, a new carpool lane shoulders and a bicycle and pedestrian pathway.

## Benicia-Martinez Bridge Project

**Project Status: Completed 2009**



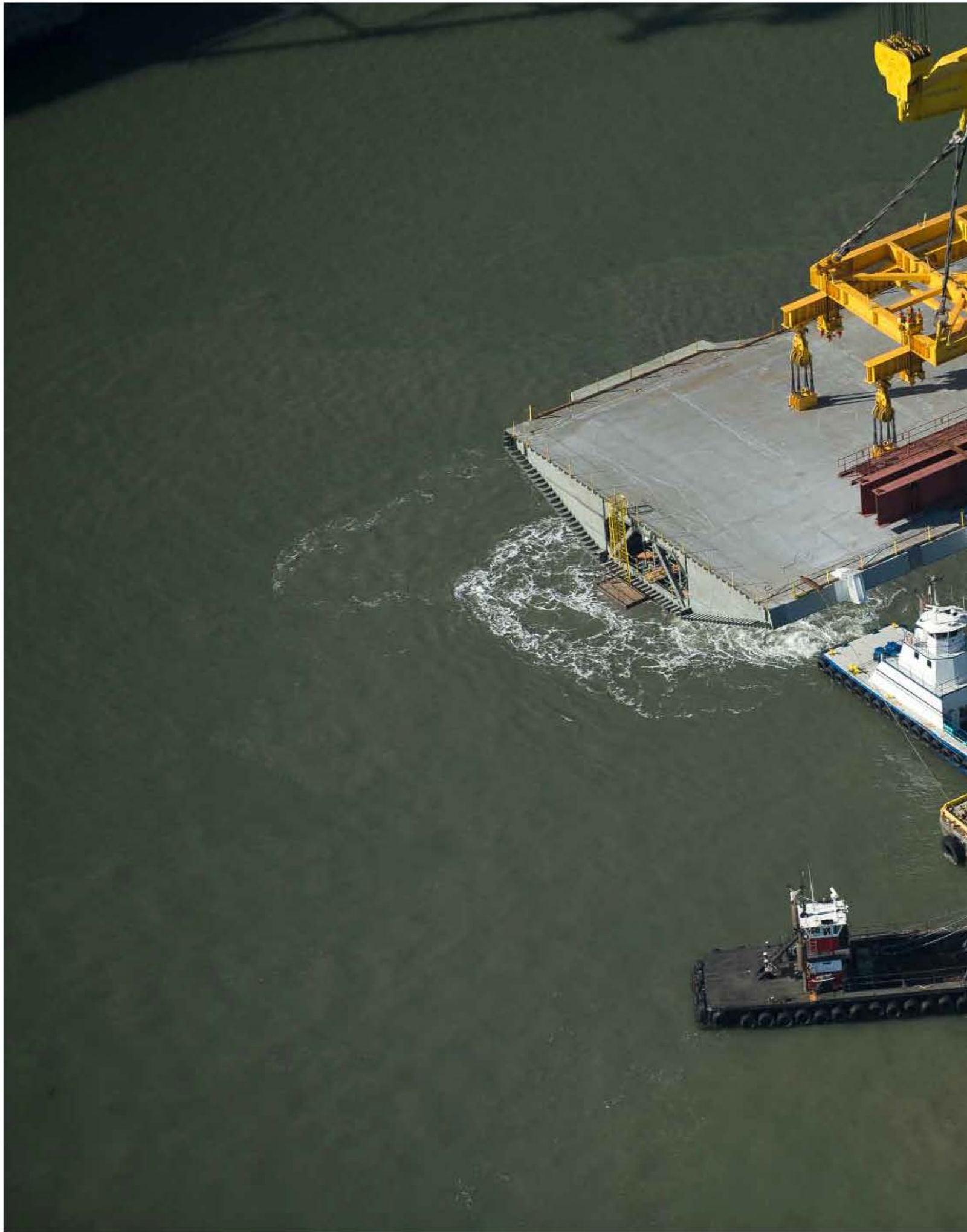
Benicia-Martinez Bridge Pedestrian/Bicycle Pathway Opened to the Public in August 2009

A two-year project to rehabilitate and reconfigure the original Benicia-Martinez Bridge began shortly after the opening of the new Congressman George Miller Bridge. The existing 1.2-mile roadway surface on the steel deck truss bridge was modified to carry four lanes of southbound traffic (one more than before)—with shoulders on both sides—plus a bicycle/pedestrian path on the west side of the span that connects to Park Road in Benicia and to Marina Vista Boulevard in Martinez. Reconstruction of the east side of the bridge and approaches was completed in August 2008 and reconstruction of the west side of the bridge an approaches and construction of the bicycle/pedestrian pathway was completed in August 2009.

## Bayfront Expressway (State Route 84) Widening Project

**Project Status: Completed 2004**

This project expanded and improved the roadway from the Dumbarton Bridge touchdown to the US 101/Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle and pedestrian access in the area.





## APPENDICES

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## Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through June 30, 2010 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (06/2010)	Cost To Date (05/2010)	Cost Forecast (06/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>SFOBB East Span Replacement Project</b>						
Capital Outlay Support	959.3	203.1	1,162.4	846.1	1,272.2	109.8
Capital Outlay Construction	4,492.2	203.7	4,695.9	3,338.8	5,005.8	309.9
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
<b>Total</b>	<b>5,486.6</b>	<b>403.5</b>	<b>5,890.1</b>	<b>4,185.6</b>	<b>6,285.7</b>	<b>395.6</b>
<b>SFOBB West Approach Replacement</b>						
Capital Outlay Support	120.0	(2.0)	118.0	117.5	118.5	0.5
Capital Outlay Construction	309.0	41.7	350.7	328.0	338.1	(12.6)
<b>Total</b>	<b>429.0</b>	<b>39.7</b>	<b>468.7</b>	<b>445.5</b>	<b>456.6</b>	<b>(12.1)</b>
<b>SFOBB West Span Retrofit</b>						
Capital Outlay Support	75.0	(0.2)	74.8	74.8	74.8	-
Capital Outlay Construction	232.9	(5.6)	227.3	227.3	227.4	0.1
<b>Total</b>	<b>307.9</b>	<b>(5.8)</b>	<b>302.1</b>	<b>302.1</b>	<b>302.2</b>	<b>0.1</b>
<b>Richmond-San Rafael Bridge Retrofit</b>						
Capital Outlay Support	134.0	(7.0)	127.0	126.7	127.0	-
Capital Outlay Construction	780.0	(90.5)	689.5	667.5	689.5	-
<b>Total</b>	<b>914.0</b>	<b>(97.5)</b>	<b>816.5</b>	<b>794.2</b>	<b>816.5</b>	<b>-</b>
<b>Benicia-Martinez Bridge Retrofit</b>						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
<b>Total</b>	<b>177.8</b>	<b>-</b>	<b>177.8</b>	<b>177.8</b>	<b>177.8</b>	<b>-</b>
<b>Carquinez Bridge Retrofit</b>						
Capital Outlay Support	28.7	0.1	28.8	28.8	28.8	-
Capital Outlay Construction	85.5	(0.1)	85.4	85.4	85.4	-
<b>Total</b>	<b>114.2</b>	<b>-</b>	<b>114.2</b>	<b>114.2</b>	<b>114.2</b>	<b>-</b>
<b>San Mateo-Hayward Bridge Retrofit</b>						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	(0.1)	135.3	135.3	135.3	-
<b>Total</b>	<b>163.5</b>	<b>(0.1)</b>	<b>163.4</b>	<b>163.4</b>	<b>163.4</b>	<b>-</b>
<b>Vincent Thomas Bridge Retrofit (Los Angeles)</b>						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	(0.1)	42.0	42.0	42.0	-
<b>Total</b>	<b>58.5</b>	<b>(0.1)</b>	<b>58.4</b>	<b>58.4</b>	<b>58.4</b>	<b>-</b>
<b>San Diego-Coronado Bridge Retrofit</b>						
Capital Outlay Support	33.5	(0.3)	33.2	33.2	33.2	-
Capital Outlay Construction	70.0	(0.6)	69.4	69.4	69.4	-
<b>Total</b>	<b>103.5</b>	<b>(0.9)</b>	<b>102.6</b>	<b>102.6</b>	<b>102.6</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through June 30, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66		Current	Cost To Date (05/2010)	Cost	At-Completion Variance
	Budget (07/2005)	Approved Changes	Budget (06/2010)		Forecast (06/2010)	
a	c	d	e = c + d	f	g	h = g - e
Antioch Bridge						
Capital Outlay Support	-	31.0	31.0	9.4	35.5	4.5
Capital Outlay Support by BATA				6.2		
Capital Outlay Construction	-	70.0	70.0	-	62.5	(7.5)
Total	-	101.0	101.0	15.6	98.0	(3.0)
Dumbarton Bridge						
Capital Outlay Support	-	95.0	95.0	15.6	95.0	-
Capital Outlay Support by BATA				6.0		
Capital Outlay Construction	-	270.0	270.0	0.3	92.7	(177.3)
Total	-	365.0	365.0	21.9	187.7	(177.3)
Subtotal Capital Outlay Support	1,433.1	319.8	1,752.9	1,346.9	1,867.6	114.7
Subtotal Capital Outlay	6,286.8	488.4	6,775.2	5,033.7	6,887.8	112.6
Subtotal Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Miscellaneous Program Costs	30.0	-	30.0	24.8	30.0	-
Subtotal Toll Bridge Seismic Retrofit Program	7,785.0	804.9	8,589.9	6,406.1	8,793.1	203.2
Programmatic Risk	-	-	-	-	201.8	201.8
Program Contingency	900.0	(191.9)	708.1	-	303.1	(405.0)
Total Toll Bridge Seismic Retrofit Program	8,685.0	613.0	9,298.0	6,406.1	9,298.0	-

## Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through June 30, 2010 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (06/2010)	Cost To Date (05/2010)	Cost Forecast (06/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>San Francisco-Oakland Bay Bridge East Span Replacement</b>						
<b>East Span - SAS Superstructure</b>						
Capital Outlay Support	214.6	160.9	375.5	230.0	472.3	96.8
Capital Outlay Construction	1,753.7	-	1,753.7	1,021.3	2,046.8	293.1
<b>Total</b>	<b>1,968.3</b>	<b>160.9</b>	<b>2,129.2</b>	<b>1,251.3</b>	<b>2,519.1</b>	<b>389.9</b>
<b>SAS W2 Foundations</b>						
Capital Outlay Support	10.0	(0.8)	9.2	9.2	9.2	-
Capital Outlay Construction	26.4	-	26.4	25.8	26.4	-
<b>Total</b>	<b>36.4</b>	<b>(0.8)</b>	<b>35.6</b>	<b>35.0</b>	<b>35.6</b>	<b>-</b>
<b>YBI South/South Detour</b>						
Capital Outlay Support	29.4	61.3	90.7	82.3	90.1	(0.6)
Capital Outlay Construction	132.0	360.9	492.9	436.5	489.4	(3.5)
<b>Total</b>	<b>161.4</b>	<b>422.2</b>	<b>583.6</b>	<b>518.8</b>	<b>579.5</b>	<b>(4.1)</b>
<b>East Span - Skyway</b>						
Capital Outlay Support	197.0	(15.8)	181.2	181.2	181.2	-
Capital Outlay Construction	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-
<b>Total</b>	<b>1,490.0</b>	<b>(54.7)</b>	<b>1,435.3</b>	<b>1,418.1</b>	<b>1,435.3</b>	<b>-</b>
<b>East Span - SAS E2/T1 Foundations</b>						
Capital Outlay Support	52.5	(24.1)	28.4	28.4	28.4	-
Capital Outlay Construction	313.5	(32.6)	280.9	274.8	280.9	-
<b>Total</b>	<b>366.0</b>	<b>(56.7)</b>	<b>309.3</b>	<b>303.2</b>	<b>309.3</b>	<b>-</b>
<b>YBI Transition Structures (see notes below)</b>						
Capital Outlay Support	78.7	27.8	106.5	31.5	116.2	9.7
Capital Outlay Construction	299.3	(93.0)	206.3	4.7	238.4	32.1
<b>Total</b>	<b>378.0</b>	<b>(65.2)</b>	<b>312.8</b>	<b>36.2</b>	<b>354.6</b>	<b>41.8</b>
<b>* YBI- Transition Structures</b>						
Capital Outlay Support			16.4	16.4	16.5	0.1
Capital Outlay Construction			-	-	-	-
<b>Total</b>			<b>16.4</b>	<b>16.4</b>	<b>16.5</b>	<b>0.1</b>
<b>* YBI- Transition Structures Contract No. 1</b>						
Capital Outlay Support			57.0	10.6	65.7	8.7
Capital Outlay Construction			144.0	4.7	164.3	20.3
<b>Total</b>			<b>201.0</b>	<b>15.2</b>	<b>230.0</b>	<b>29.0</b>
<b>* YBI- Transition Structures Contract No. 2</b>						
Capital Outlay Support			32.0	4.5	33.0	1.0
Capital Outlay Construction			59.0	-	70.8	11.8
<b>Total</b>			<b>91.0</b>	<b>4.5</b>	<b>103.8</b>	<b>12.8</b>
<b>* YBI- Transition Structures Contract No. 3 Landscape</b>						
Capital Outlay Support			1.0	-	1.0	-
Capital Outlay Construction			3.3	-	3.3	-
<b>Total</b>			<b>4.3</b>	<b>-</b>	<b>4.3</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through June 30, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (06/2010)	Cost To Date (05/2010)	Cost Forecast (06/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Oakland Touchdown (see notes below)</b>						
Capital Outlay Support	74.4	19.5	93.9	75.2	95.2	1.3
Capital Outlay Construction	283.8	4.2	288.0	207.5	282.1	(5.9)
<b>Total</b>	<b>358.2</b>	<b>23.7</b>	<b>381.9</b>	<b>282.7</b>	<b>377.3</b>	<b>(4.6)</b>
<b>* OTD Prior-to-Split Costs</b>						
Capital Outlay Support			21.7	20.1	21.7	-
Capital Outlay Construction			-	-	-	-
<b>Total</b>			<b>21.7</b>	<b>20.1</b>	<b>21.7</b>	<b>-</b>
<b>* OTD Submarine Cable</b>						
Capital Outlay Support			0.9	0.9	0.9	-
Capital Outlay Construction			9.6	7.9	9.6	-
<b>Total</b>			<b>10.5</b>	<b>8.8</b>	<b>10.5</b>	<b>-</b>
<b>* OTD No. 1 (Westbound)</b>						
Capital Outlay Support			47.3	46.7	47.6	0.3
Capital Outlay Construction			212.0	199.6	208.9	(3.1)
<b>Total</b>			<b>259.3</b>	<b>246.3</b>	<b>256.5</b>	<b>(2.8)</b>
<b>* OTD No. 2 (Eastbound)</b>						
Capital Outlay Support			22.5	6.8	23.5	1.0
Capital Outlay Construction			62.0	-	59.2	(2.8)
<b>Total</b>			<b>84.5</b>	<b>6.8</b>	<b>82.7</b>	<b>(1.8)</b>
<b>* OTD Electrical Systems</b>						
Capital Outlay Support			1.5	0.8	1.5	-
Capital Outlay Construction			4.4	-	4.4	-
<b>Total</b>			<b>5.9</b>	<b>0.8</b>	<b>5.9</b>	<b>-</b>
<b>Existing Bridge Demolition</b>						
Capital Outlay Support	79.7	(19.9)	59.8	0.4	62.4	2.6
Capital Outlay Construction	239.2	(0.1)	239.1	-	233.0	(6.1)
<b>Total</b>	<b>318.9</b>	<b>(20.0)</b>	<b>298.9</b>	<b>0.4</b>	<b>295.4</b>	<b>(3.5)</b>
<b>YBI/SAS Archeology</b>						
Capital Outlay Support	1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction	1.1	-	1.1	1.1	1.1	-
<b>Total</b>	<b>2.2</b>	<b>-</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>-</b>
<b>YBI - USCG Road Relocation</b>						
Capital Outlay Support	3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction	3.0	-	3.0	2.8	3.0	-
<b>Total</b>	<b>6.0</b>	<b>-</b>	<b>6.0</b>	<b>5.5</b>	<b>6.0</b>	<b>-</b>
<b>YBI - Substation and Viaduct</b>						
Capital Outlay Support	6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction	11.6	-	11.6	11.3	11.6	-
<b>Total</b>	<b>18.1</b>	<b>-</b>	<b>18.1</b>	<b>17.7</b>	<b>18.1</b>	<b>-</b>
<b>Oakland Geofill</b>						
Capital Outlay Support	2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction	8.2	-	8.2	8.2	8.2	-
<b>Total</b>	<b>10.7</b>	<b>-</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through June 30, 2010 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (06/2010)	Cost To Date (05/2010)	Cost Forecast (06/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>San Francisco-Oakland Bay Bridge East Span Replacement</b>						
<b>East Span - SAS Superstructure</b>						
Capital Outlay Support	214.6	160.9	375.5	230.0	472.3	96.8
Capital Outlay Construction	1,753.7	-	1,753.7	1,021.3	2,046.8	293.1
<b>Total</b>	<b>1,968.3</b>	<b>160.9</b>	<b>2,129.2</b>	<b>1,251.3</b>	<b>2,519.1</b>	<b>389.9</b>
<b>SAS W2 Foundations</b>						
Capital Outlay Support	10.0	(0.8)	9.2	9.2	9.2	-
Capital Outlay Construction	26.4	-	26.4	25.8	26.4	-
<b>Total</b>	<b>36.4</b>	<b>(0.8)</b>	<b>35.6</b>	<b>35.0</b>	<b>35.6</b>	<b>-</b>
<b>YBI South/South Detour</b>						
Capital Outlay Support	29.4	61.3	90.7	82.3	90.1	(0.6)
Capital Outlay Construction	132.0	360.9	492.9	436.5	489.4	(3.5)
<b>Total</b>	<b>161.4</b>	<b>422.2</b>	<b>583.6</b>	<b>518.8</b>	<b>579.5</b>	<b>(4.1)</b>
<b>East Span - Skyway</b>						
Capital Outlay Support	197.0	(15.8)	181.2	181.2	181.2	-
Capital Outlay Construction	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-
<b>Total</b>	<b>1,490.0</b>	<b>(54.7)</b>	<b>1,435.3</b>	<b>1,418.1</b>	<b>1,435.3</b>	<b>-</b>
<b>East Span - SAS E2/T1 Foundations</b>						
Capital Outlay Support	52.5	(24.1)	28.4	28.4	28.4	-
Capital Outlay Construction	313.5	(32.6)	280.9	274.8	280.9	-
<b>Total</b>	<b>366.0</b>	<b>(56.7)</b>	<b>309.3</b>	<b>303.2</b>	<b>309.3</b>	<b>-</b>
<b>YBI Transition Structures (see notes below)</b>						
Capital Outlay Support	78.7	27.8	106.5	31.5	116.2	9.7
Capital Outlay Construction	299.3	(93.0)	206.3	4.7	238.4	32.1
<b>Total</b>	<b>378.0</b>	<b>(65.2)</b>	<b>312.8</b>	<b>36.2</b>	<b>354.6</b>	<b>41.8</b>
<b>* YBI- Transition Structures</b>						
Capital Outlay Support			16.4	16.4	16.5	0.1
Capital Outlay Construction			-	-	-	-
<b>Total</b>			<b>16.4</b>	<b>16.4</b>	<b>16.5</b>	<b>0.1</b>
<b>* YBI- Transition Structures Contract No. 1</b>						
Capital Outlay Support			57.0	10.6	65.7	8.7
Capital Outlay Construction			144.0	4.7	164.3	20.3
<b>Total</b>			<b>201.0</b>	<b>15.2</b>	<b>230.0</b>	<b>29.0</b>
<b>* YBI- Transition Structures Contract No. 2</b>						
Capital Outlay Support			32.0	4.5	33.0	1.0
Capital Outlay Construction			59.0	-	70.8	11.8
<b>Total</b>			<b>91.0</b>	<b>4.5</b>	<b>103.8</b>	<b>12.8</b>
<b>* YBI- Transition Structures Contract No. 3 Landscape</b>						
Capital Outlay Support			1.0	-	1.0	-
Capital Outlay Construction			3.3	-	3.3	-
<b>Total</b>			<b>4.3</b>	<b>-</b>	<b>4.3</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through June 30, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (06/2010)	Cost To Date (05/2010)	Cost Forecast (06/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Oakland Touchdown (see notes below)</b>						
Capital Outlay Support	74.4	19.5	93.9	75.2	95.2	1.3
Capital Outlay Construction	283.8	4.2	288.0	207.5	282.1	(5.9)
<b>Total</b>	<b>358.2</b>	<b>23.7</b>	<b>381.9</b>	<b>282.7</b>	<b>377.3</b>	<b>(4.6)</b>
<b>* OTD Prior-to-Split Costs</b>						
Capital Outlay Support			21.7	20.1	21.7	-
Capital Outlay Construction			-	-	-	-
<b>Total</b>			<b>21.7</b>	<b>20.1</b>	<b>21.7</b>	<b>-</b>
<b>* OTD Submarine Cable</b>						
Capital Outlay Support			0.9	0.9	0.9	-
Capital Outlay Construction			9.6	7.9	9.6	-
<b>Total</b>			<b>10.5</b>	<b>8.8</b>	<b>10.5</b>	<b>-</b>
<b>* OTD No. 1 (Westbound)</b>						
Capital Outlay Support			47.3	46.7	47.6	0.3
Capital Outlay Construction			212.0	199.6	208.9	(3.1)
<b>Total</b>			<b>259.3</b>	<b>246.3</b>	<b>256.5</b>	<b>(2.8)</b>
<b>* OTD No. 2 (Eastbound)</b>						
Capital Outlay Support			22.5	6.8	23.5	1.0
Capital Outlay Construction			62.0	-	59.2	(2.8)
<b>Total</b>			<b>84.5</b>	<b>6.8</b>	<b>82.7</b>	<b>(1.8)</b>
<b>* OTD Electrical Systems</b>						
Capital Outlay Support			1.5	0.8	1.5	-
Capital Outlay Construction			4.4	-	4.4	-
<b>Total</b>			<b>5.9</b>	<b>0.8</b>	<b>5.9</b>	<b>-</b>
<b>Existing Bridge Demolition</b>						
Capital Outlay Support	79.7	(19.9)	59.8	0.4	62.4	2.6
Capital Outlay Construction	239.2	(0.1)	239.1	-	233.0	(6.1)
<b>Total</b>	<b>318.9</b>	<b>(20.0)</b>	<b>298.9</b>	<b>0.4</b>	<b>295.4</b>	<b>(3.5)</b>
<b>YBI/SAS Archeology</b>						
Capital Outlay Support	1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction	1.1	-	1.1	1.1	1.1	-
<b>Total</b>	<b>2.2</b>	<b>-</b>	<b>2.2</b>	<b>2.2</b>	<b>2.2</b>	<b>-</b>
<b>YBI - USCG Road Relocation</b>						
Capital Outlay Support	3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction	3.0	-	3.0	2.8	3.0	-
<b>Total</b>	<b>6.0</b>	<b>-</b>	<b>6.0</b>	<b>5.5</b>	<b>6.0</b>	<b>-</b>
<b>YBI - Substation and Viaduct</b>						
Capital Outlay Support	6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction	11.6	-	11.6	11.3	11.6	-
<b>Total</b>	<b>18.1</b>	<b>-</b>	<b>18.1</b>	<b>17.7</b>	<b>18.1</b>	<b>-</b>
<b>Oakland Geofill</b>						
Capital Outlay Support	2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction	8.2	-	8.2	8.2	8.2	-
<b>Total</b>	<b>10.7</b>	<b>-</b>	<b>10.7</b>	<b>10.7</b>	<b>10.7</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through June 30, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (06/2010)	Cost To Date (05/2010)	Cost Forecast (06/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Pile Installation Demonstration Project</b>						
Capital Outlay Support	1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction	9.2	-	9.2	9.2	9.3	-
<b>Total</b>	<b>11.0</b>	<b>-</b>	<b>11.0</b>	<b>11.0</b>	<b>11.1</b>	<b>-</b>
<b>Stormwater Treatment Measures</b>						
Capital Outlay Support	6.0	2.2	8.2	8.1	8.2	-
Capital Outlay Construction	15.0	3.3	18.3	16.7	18.3	-
<b>Total</b>	<b>21.0</b>	<b>5.5</b>	<b>26.5</b>	<b>24.8</b>	<b>26.5</b>	<b>-</b>
<b>Right-of-Way and Environmental Mitigation</b>						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay & Right-of-Way	72.4	-	72.4	51.2	72.4	-
<b>Total</b>	<b>72.4</b>	<b>-</b>	<b>72.4</b>	<b>51.2</b>	<b>72.4</b>	<b>-</b>
<b>Sunk Cost - Existing East Span Retrofit</b>						
Capital Outlay Support	39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction	30.8	-	30.8	30.8	30.8	-
<b>Total</b>	<b>70.3</b>	<b>-</b>	<b>70.3</b>	<b>70.3</b>	<b>70.3</b>	<b>-</b>
<b>Other Capital Outlay Support</b>						
Environmental Phase	97.7	-	97.7	97.7	97.7	-
Pre-Split Project Expenditures	44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs	20.0	(8.0)	12.0	3.2	12.0	-
<b>Total</b>	<b>162.6</b>	<b>(8.0)</b>	<b>154.6</b>	<b>145.8</b>	<b>154.6</b>	<b>-</b>
<b>Subtotal Capital Outlay Support</b>	<b>959.3</b>	<b>203.1</b>	<b>1,162.4</b>	<b>846.1</b>	<b>1,272.2</b>	<b>109.8</b>
<b>Subtotal Capital Outlay Construction</b>	<b>4,492.2</b>	<b>203.7</b>	<b>4,695.9</b>	<b>3,338.8</b>	<b>5,005.8</b>	<b>309.9</b>
<b>Other Budgeted Capital</b>	<b>35.1</b>	<b>(3.3)</b>	<b>31.8</b>	<b>0.7</b>	<b>7.7</b>	<b>(24.1)</b>
<b>Total SFOBB East Span Replacement Project</b>	<b>5,486.6</b>	<b>403.5</b>	<b>5,890.1</b>	<b>4,185.6</b>	<b>6,285.7</b>	<b>395.6</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (05/2010)	Cost To Date (05/2010)	Cost Forecast (05/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>New Benicia-Martinez Bridge Project</b>						
<b>New Bridge</b>						
Capital Outlay Support						
BATA Funding	84.9	6.9	91.8	91.8	91.8	-
Non-BATA Funding	-	0.1	0.1	0.1	0.1	-
Subtotal	84.9	7.0	91.9	91.9	91.9	-
Capital Outlay Construction						
BATA Funding	661.9	94.6	756.5	753.8	756.5	-
Non-BATA Funding	10.1	-	10.1	10.1	10.1	-
Subtotal	672.0	94.6	766.6	763.9	766.6	-
<b>Total</b>	<b>756.9</b>	<b>101.6</b>	<b>858.5</b>	<b>855.8</b>	<b>858.5</b>	<b>-</b>
<b>I-680/I-780 Interchange Reconstruction</b>						
Capital Outlay Support						
BATA Funding	24.9	5.2	30.1	30.1	30.1	-
Non-BATA Funding	1.4	5.2	6.6	6.3	6.6	-
Subtotal	26.3	10.4	36.7	36.4	36.7	-
Capital Outlay Construction						
BATA Funding	54.7	26.9	81.6	77.1	81.6	-
Non-BATA Funding	21.6	-	21.6	21.7	21.7	0.1
Subtotal	76.3	26.9	103.2	98.8	103.3	0.1
<b>Total</b>	<b>102.6</b>	<b>37.3</b>	<b>139.9</b>	<b>135.2</b>	<b>140.0</b>	<b>0.1</b>
<b>I-680/Marina Vista Interchange Reconstruction</b>						
Capital Outlay Support	18.3	1.8	20.1	20.2	20.2	0.1
Capital Outlay Construction	51.5	4.9	56.4	56.1	56.4	-
<b>Total</b>	<b>69.8</b>	<b>6.7</b>	<b>76.5</b>	<b>76.3</b>	<b>76.6</b>	<b>0.1</b>
<b>New Toll Plaza and Administration Building</b>						
Capital Outlay Support	11.9	3.8	15.7	15.7	15.7	-
Capital Outlay Construction	24.3	2.0	26.3	25.1	26.3	-
<b>Total</b>	<b>36.2</b>	<b>5.8</b>	<b>42.0</b>	<b>40.8</b>	<b>42.0</b>	<b>-</b>
<b>Existing Bridge &amp; Interchange Modifications</b>						
Capital Outlay Support						
BATA Funding	4.3	13.5	17.8	17.8	17.8	-
Non-BATA Funding	-	0.9	0.9	0.8	0.9	-
Subtotal	4.3	14.4	18.7	18.6	18.7	-
Capital Outlay Construction						
BATA Funding	17.2	32.8	50.0	37.1	50.0	-
Non-BATA Funding	-	9.5	9.5	-	9.5	-
Subtotal	17.2	42.3	59.5	37.1	59.5	-
<b>Total</b>	<b>21.5</b>	<b>56.7</b>	<b>78.2</b>	<b>55.7</b>	<b>78.2</b>	<b>-</b>
<b>Other Contracts</b>						
Capital Outlay Support	11.4	(2.3)	9.1	9.1	9.1	-
Capital Outlay Construction	20.3	3.3	23.6	17.8	23.6	-
Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
<b>Total</b>	<b>52.1</b>	<b>0.9</b>	<b>53.0</b>	<b>43.9</b>	<b>53.0</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (05/2010)	Cost To Date (05/2010)	Cost Forecast (05/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project continued...						
Subtotal BATA Capital Outlay Support	155.7	28.9	184.6	184.7	184.7	0.1
Subtotal BATA Capital Outlay Construction	829.9	164.5	994.4	967.0	994.4	-
Subtotal Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support	1.4	6.2	7.6	7.2	7.6	-
Subtotal Non-BATA Capital Outlay Construction	31.7	9.5	41.2	31.8	41.3	0.1
Project Reserves	20.8	3.6	24.4	-	24.2	(0.2)
Total New Benicia-Martinez Bridge Project	1,059.9	212.6	1,272.5	1,207.7	1,272.5	-
Notes:	Includes EA's 00601_,00603_,00605_,00606_, 00608_, 00609_, 0060A_, 0060C_, 0060E_, 0060F_, 0060G_, and 0060H_ and all Project Right-of-Way					
Carquinez Bridge Replacement Project						
New Bridge						
Capital Outlay Support	60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction	253.3	2.7	256.0	255.9	256.0	-
Total	313.8	2.4	316.2	316.1	316.2	-
Crockett Interchange Reconstruction						
Capital Outlay Support	32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction	73.9	(1.9)	72.0	71.9	72.0	-
Total	105.9	(2.0)	103.9	103.8	103.9	-
Existing 1927 Bridge Demolition						
Capital Outlay Support	16.1	(0.5)	15.6	15.7	15.7	0.1
Capital Outlay Construction	35.2	-	35.2	34.8	35.2	-
Total	51.3	(0.5)	50.8	50.5	50.9	0.1
Other Contracts						
Capital Outlay Support	15.8	1.2	17.0	16.3	17.0	-
Capital Outlay Construction	18.8	(1.2)	17.6	16.3	17.6	-
Capital Outlay Right-of-Way	10.5	(0.1)	10.4	9.9	10.4	-
Total	45.1	(0.1)	45.0	42.5	45.0	-
Subtotal BATA Capital Outlay Support	124.4	0.3	124.7	124.1	124.8	0.1
Subtotal BATA Capital Outlay Construction	381.2	(0.4)	380.8	378.9	380.8	-
Subtotal Capital Outlay Right-of-Way	10.5	(0.1)	10.4	9.9	10.4	-
Project Reserves	12.1	(9.8)	2.3	-	2.2	(0.1)
Total Carquinez Bridge Replacement Project	528.2	(10.0)	518.2	512.9	518.2	-
Notes:	Other Contracts includes EA's 01301_,01302_, 01303_, 01304_,01305_, 01306_, 01307_, 01308_, 01309_,0130A_, 0130C_, 0130D_, 0130F_, 0130G_, 0130H_, 0130J_, 00453_, 00493_, 04700_, 00607_, 2A270_, and 29920_ and all Project Right-of-Way					

Note: Details may not sum to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (05/2010)	Cost To Date (05/2010)	Cost Forecast (05/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation</b>						
See note <sup>1</sup> below						
Capital Outlay Support						
BATA Funding	2.2	(0.8)	1.4	1.4	1.4	-
Non-BATA Funding	8.6	1.8	10.4	10.4	10.4	-
Subtotal	10.8	1.0	11.8	11.8	11.8	-
Capital Outlay Construction						
BATA Funding	40.2	(6.8)	33.4	33.3	33.4	-
Non-BATA Funding	51.1	-	51.1	51.1	51.1	-
Subtotal	91.3	(6.8)	84.5	84.4	84.5	-
Project Reserves	-	0.8	0.8	-	0.8	-
<b>Total</b>	<b>102.1</b>	<b>(5.0)</b>	<b>97.1</b>	<b>96.2</b>	<b>97.1</b>	<b>-</b>
<b>Richmond-San Rafael Bridge Deck Overlay Rehabilitation</b>						
Capital Outlay Support						
BATA Funding	4.0	(0.7)	3.3	3.3	3.3	-
Non-BATA Funding	4.0	(4.0)	-	-	-	-
Subtotal	8.0	(4.7)	3.3	3.3	3.3	-
Capital Outlay Construction	16.9	(0.6)	16.3	16.3	16.3	-
Project Reserves	0.1	0.3	0.4	-	0.4	-
<b>Total</b>	<b>25.0</b>	<b>(5.0)</b>	<b>20.0</b>	<b>19.6</b>	<b>20.0</b>	<b>-</b>
<b>Richmond Parkway Project (RM 1 Share Only)</b>						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay Construction	5.9	-	5.9	4.3	5.9	-
<b>Total</b>	<b>5.9</b>	<b>-</b>	<b>5.9</b>	<b>4.3</b>	<b>5.9</b>	<b>-</b>
<b>San Mateo-Hayward Bridge Widening</b>						
Capital Outlay Support	34.6	(0.5)	34.1	34.1	34.1	-
Capital Outlay Construction	180.2	(6.1)	174.1	174.1	174.1	-
Capital Outlay Right-of-Way	1.5	(0.9)	0.6	0.5	0.6	-
Project Reserves	1.5	(0.5)	1.0	-	1.0	-
<b>Total</b>	<b>217.8</b>	<b>(8.0)</b>	<b>209.8</b>	<b>208.7</b>	<b>209.8</b>	<b>-</b>
<b>I-880/SR-92 Interchange Reconstruction</b>						
Capital Outlay Support	28.8	34.6	63.4	53.6	63.4	-
Capital Outlay Construction						
BATA Funding	85.2	66.2	151.4	95.0	151.4	-
Non-BATA Funding	9.6	-	9.6	-	9.6	-
Subtotal	94.8	66.2	161.0	95.0	161.0	-
Capital Outlay Right-of-Way	9.9	7.0	16.9	12.3	16.9	-
Project Reserves	0.3	3.4	3.7	-	3.7	-
<b>Total</b>	<b>133.8</b>	<b>111.2</b>	<b>245.0</b>	<b>160.9</b>	<b>245.0</b>	<b>-</b>
<b>Bayfront Expressway Widening</b>						
Capital Outlay Support	8.6	(0.2)	8.4	8.3	8.4	-
Capital Outlay Construction	26.5	(1.5)	25.0	24.9	25.0	-
Capital Outlay Right-of-Way	0.2	-	0.2	0.2	0.2	-
Project Reserves	0.8	(0.3)	0.5	-	0.5	-
<b>Total</b>	<b>36.1</b>	<b>(2.0)</b>	<b>34.1</b>	<b>33.4</b>	<b>34.1</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.

## Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (05/2010)	Cost To Date (05/2010)	Cost Forecast (05/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>US 101/University Avenue Interchange Modification</b>						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay Construction	3.8	-	3.8	3.7	3.8	-
<b>Total</b>	<b>3.8</b>	<b>-</b>	<b>3.8</b>	<b>3.7</b>	<b>3.8</b>	<b>-</b>
Subtotal BATA Capital Outlay Support	358.3	61.6	419.9	409.5	420.1	0.2
Subtotal BATA Capital Outlay Construction	1,569.8	215.3	1,785.1	1,697.5	1,785.1	-
Subtotal Capital Outlay Right-of-Way	42.5	5.9	48.4	39.9	48.4	-
Subtotal Non-BATA Capital Outlay Support	14.0	4.0	18.0	17.6	18.0	-
Subtotal Non-BATA Capital Outlay Construction	92.4	9.5	101.9	82.9	102.0	0.1
Project Reserves	35.6	(2.5)	33.1	-	32.8	(0.3)
<b>Total RM1 Program</b>	<b>2,112.6</b>	<b>293.8</b>	<b>2,406.4</b>	<b>2,247.4</b>	<b>2,406.4</b>	<b>-</b>
<b>Notes:</b>						
1 Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U_ and 04157_						
2 San Mateo-Hayward Bridge Widening Includes EA's 00305_, 04501_, 04502_, 04503_, 04504_, 04505_, 04506_, 04507_, 04508_, 04509_, 27740_, 27790_, 04860_						

Note: Details may not sum to totals due to rounding effects.



## Appendix E: Project Progress Photographs

### Self-Anchored Suspension Bridge Fabrication



Heavy Dock Lift 7 and 8



Traveler Rail Fabrication



Traveler Rail Fabrication



Lift 14 Anchorage Construction Model

## Appendix E: Project Progress Photographs

### Self-Anchored Suspension Bridge Fabrication (cont.)



Segments of Roadway Box 9 in Trial Assembly Yard



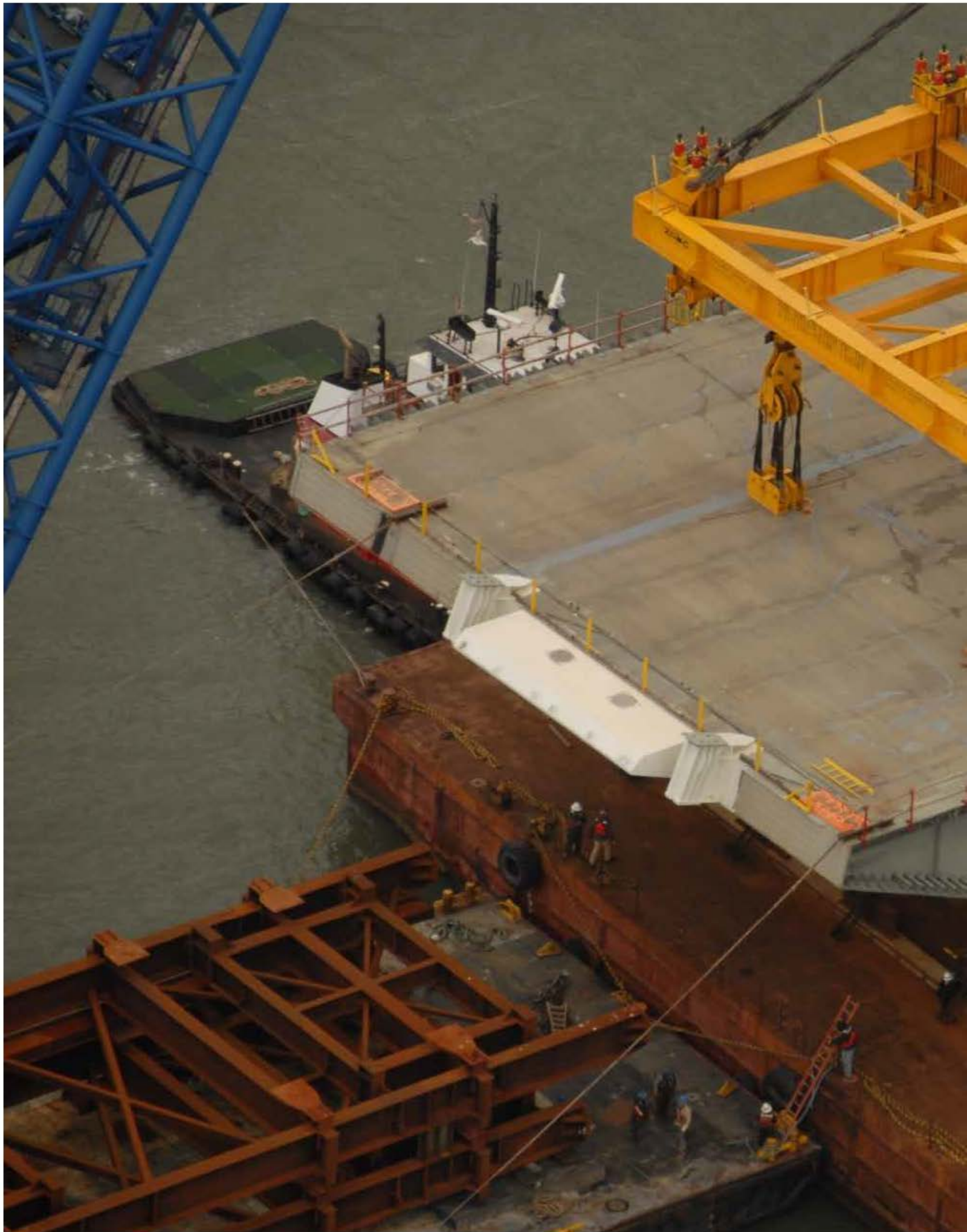
Roadway Box 8 with Crossbeam 9 and 10 and Roadway Box 7 Segments in Background

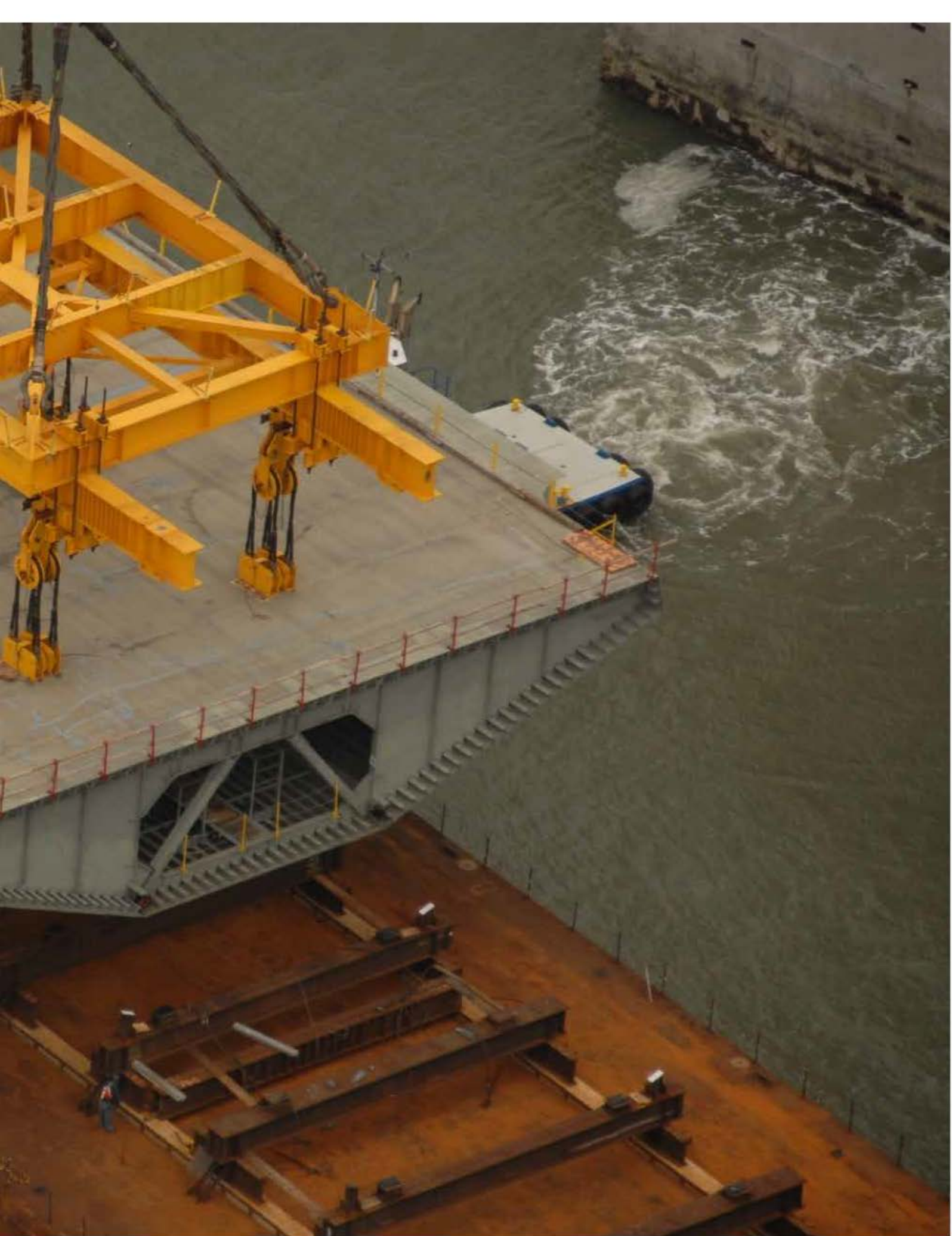


Roadway Box 9 in Trial Assembly Yard



Roadway Box 8 in Trial Assembly Yard





## Appendix E: Project Progress Photographs

### Self-Anchored Suspension Bridge Field Work



SAS Eastbound and Westbound Roadway Boxes Placed



Overview of the SAS Construction Progress



SAS Sixth Westbound Roadway Box Ready to be Placed



T1 Erection Temporary Tower Framing Structure

## Appendix E: Project Progress Photographs

### Oakland Touchdown



OTD #1 Temporary Access Road to Skyway from Oakland Touchdown



OTD #1 Eastbound Detour Road Completed



OTD #1 Mole Substation Completed



OTD #1 Service Platform and Equipment Completed

## Appendix E: Project Progress Photographs

### 92/880 Interchange




Irrigation Crossover at Hesperian Blvd.



Eldridge Pedestrian Over Crossing



Overview of 92/880 Interchange



**AB144/SB 66 BUDGET:** The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

**BATA BUDGET:** The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

**APPROVED CHANGES:** For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

**CURRENT APPROVED BUDGET:** The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

**COST TO DATE:** The actual expenditures incurred by the program, project or contract as of the month and year shown.

**COST FORECAST:** The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

**AT COMPLETION VARIANCE or VARIANCE (cost):** The mathematical difference between the Cost Forecast and the Current Approved Budget.

**AB 144/SB 66 PROJECT COMPLETE BASELINE:** The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

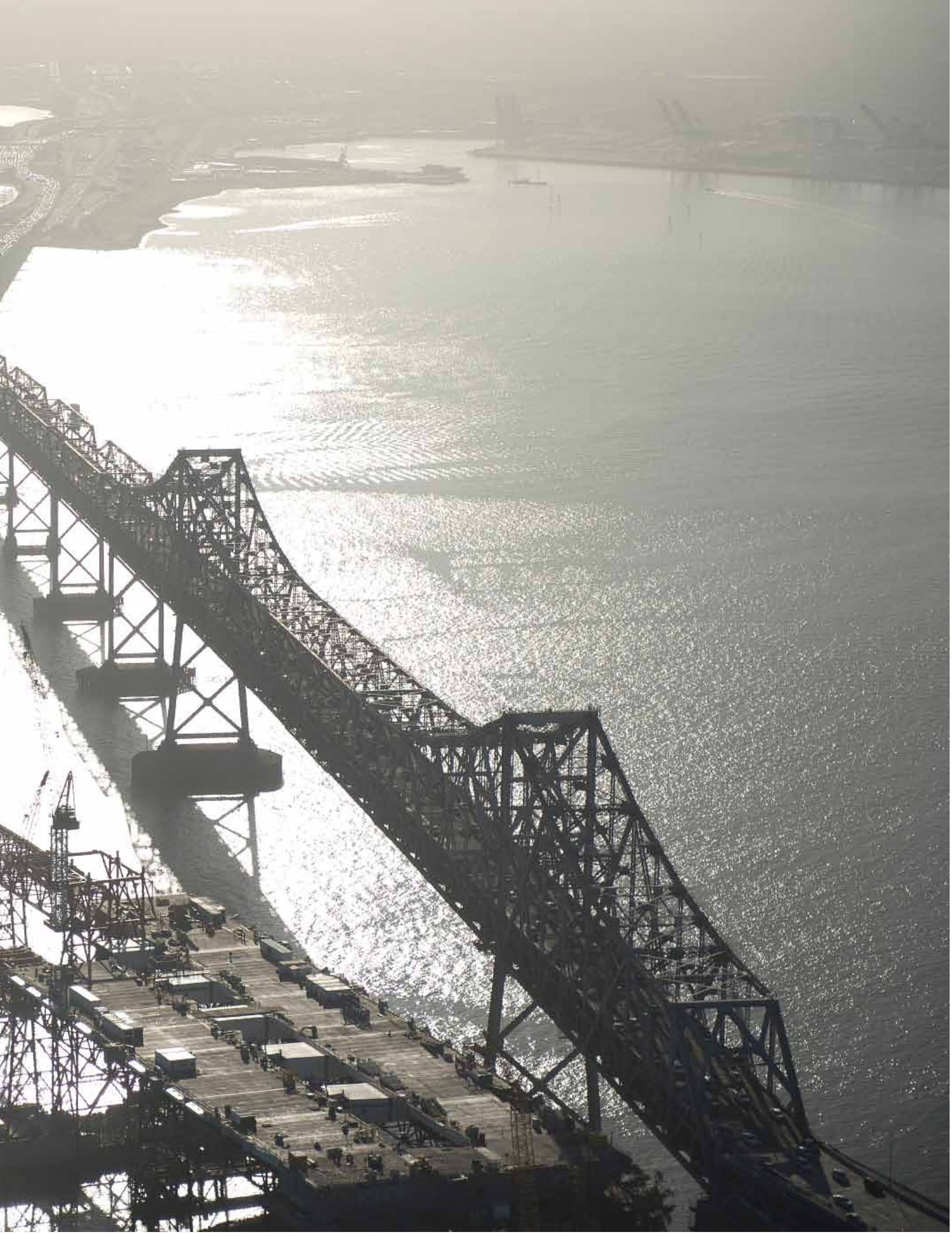
**BATA PROJECT COMPLETE BASELINE:** The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

**PROJECT COMPLETE CURRENT APPROVED SCHEDULE:** The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

**PROJECT COMPLETE SCHEDULE FORECAST:** The current projected date for the completion of the program, project, or contract.

**SCHEDULE VARIANCE or VARIANCE (schedule):** The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

**% COMPLETE:** % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.





## **ITEM 4: OTHER BUSINESS**

No Attachments